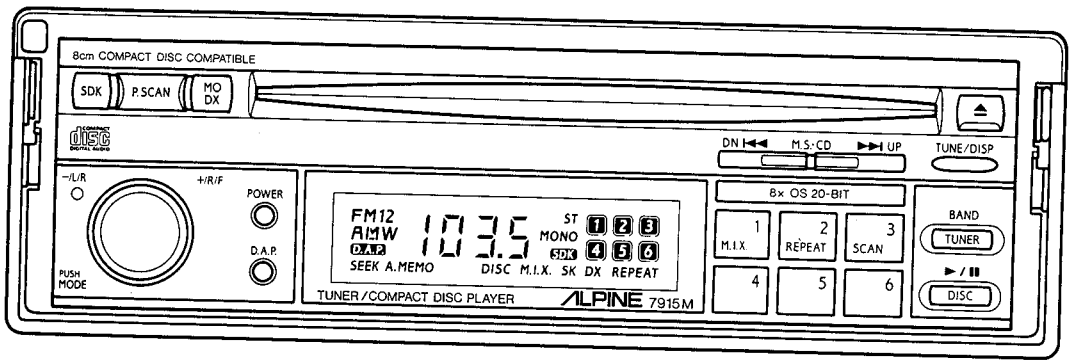
ALPINE SERVICE MANUAL

Digital FM/MW/LW Compact Disc Player

COMPACT disc DIGITAL AUDIO

REVISED

- Serial Numbers after No. 11015501M.
- This service manual contains only differences from the Service Manual of Model 7915M (Part No. 68P40496W02).
- For the CD player mechanism parts (DP24A210) of this model, refer to the Service Manual • DP-S Series (68P13315W04).



7915M

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Refer to the Service Manual 7803M (68P32124W02).

Specifications

● Refer to the Service Manual 7915M (68P40469W02) for the description not mentioned in this manual.

<FM SECTION>

Intermediate Frequency	10.7 ± 0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono 30dB S/N, at 98.1MHz)	17.2dBf
Limiting Sensitivity (-10dB, at 98.1MHz)	13.2 ± 6dBf
S/N Ratio (Stereo at 98.1MHz)	48dB
Image Rejection (at 98.1MHz)	40dB
IF Rejection (at 90.1MHz)	60dB
Distortion (Input 1mV at 98.1MHz)	1%
Frequency Response (Ref. 400Hz, at 98.1MHz)	100Hz : 0 ± 3dB
	10kHz : -12 ± 3dB
Stereo Separation (at 1kHz)	25dB
SK Sensitivity (at 98.1MHz)	25.2dBf

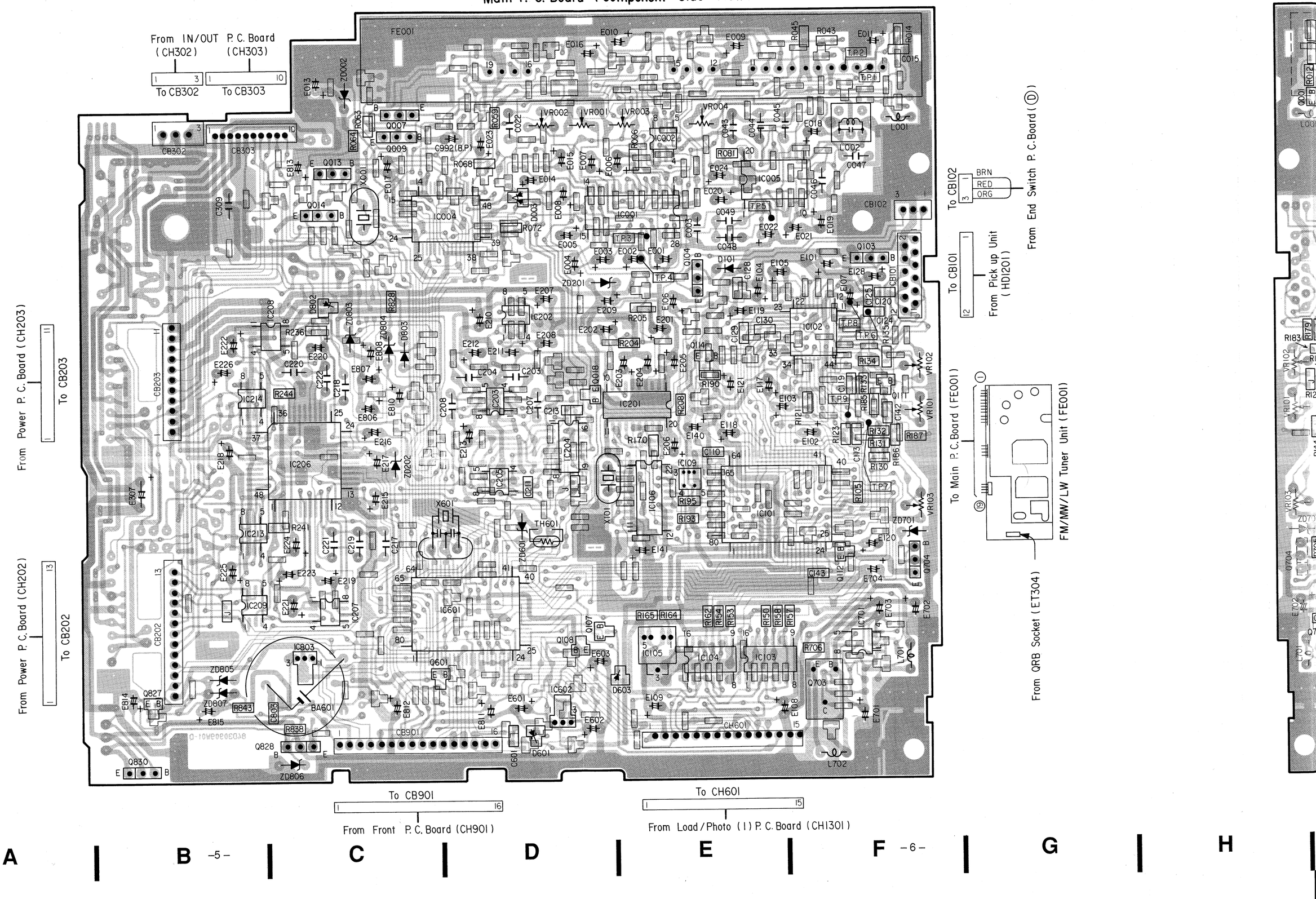
<GENERAL>

Power Supply	DC14V
Pre-Output Voltage/Impedance	1.6V/10kohm
Semiconductors	34 IC's, 81 Transistors, 27 Diodes, 13 Zener Diodes
Dimensions (W×H×D)	Chassis : 178×50×153 mm
	Nose : 178×50×15 mm
Weight	2.2kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

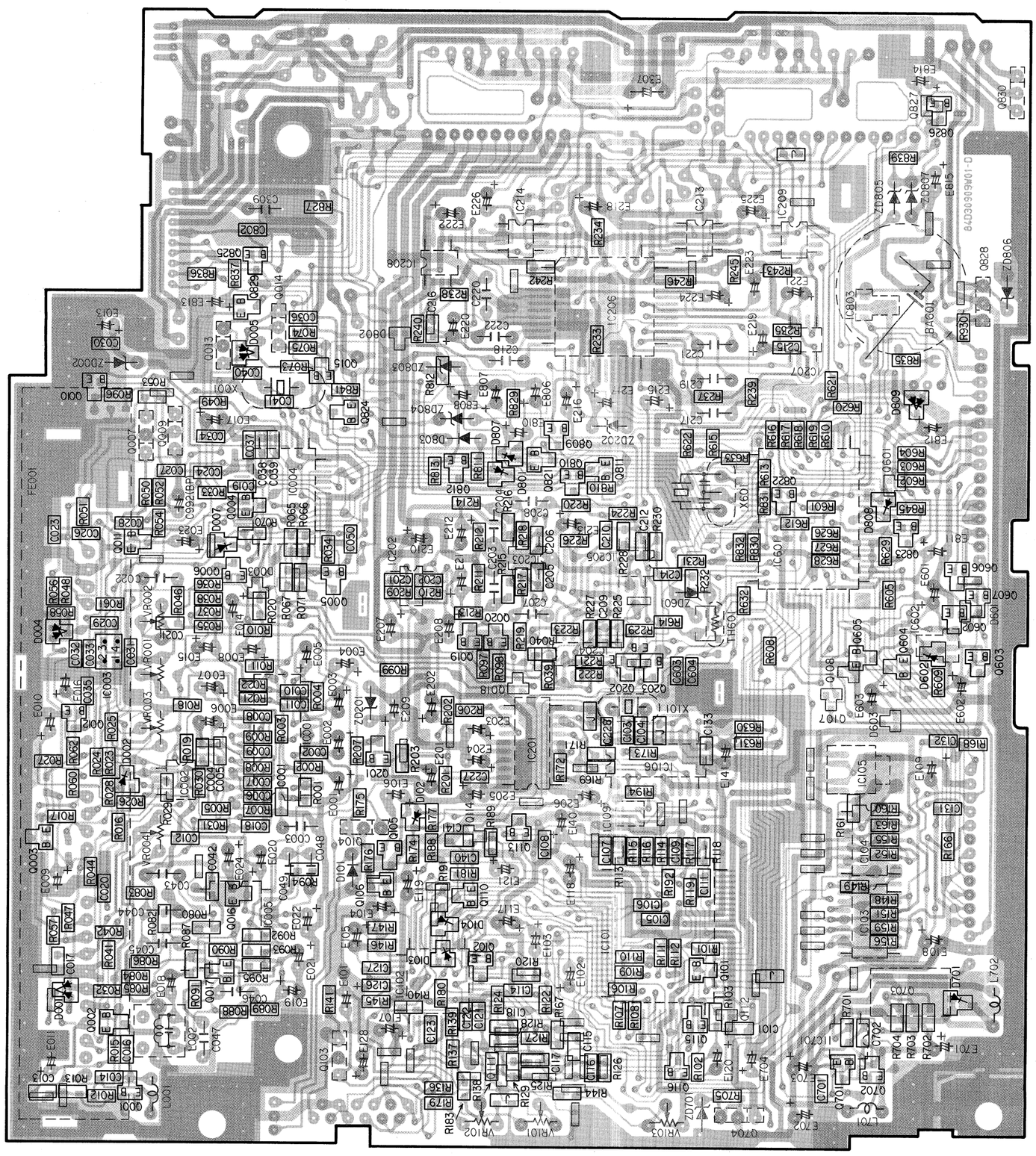
Parts Layout on P.C. Boards and Wiring Diagram (1/2)

Main P. C. Board (Component Side View)



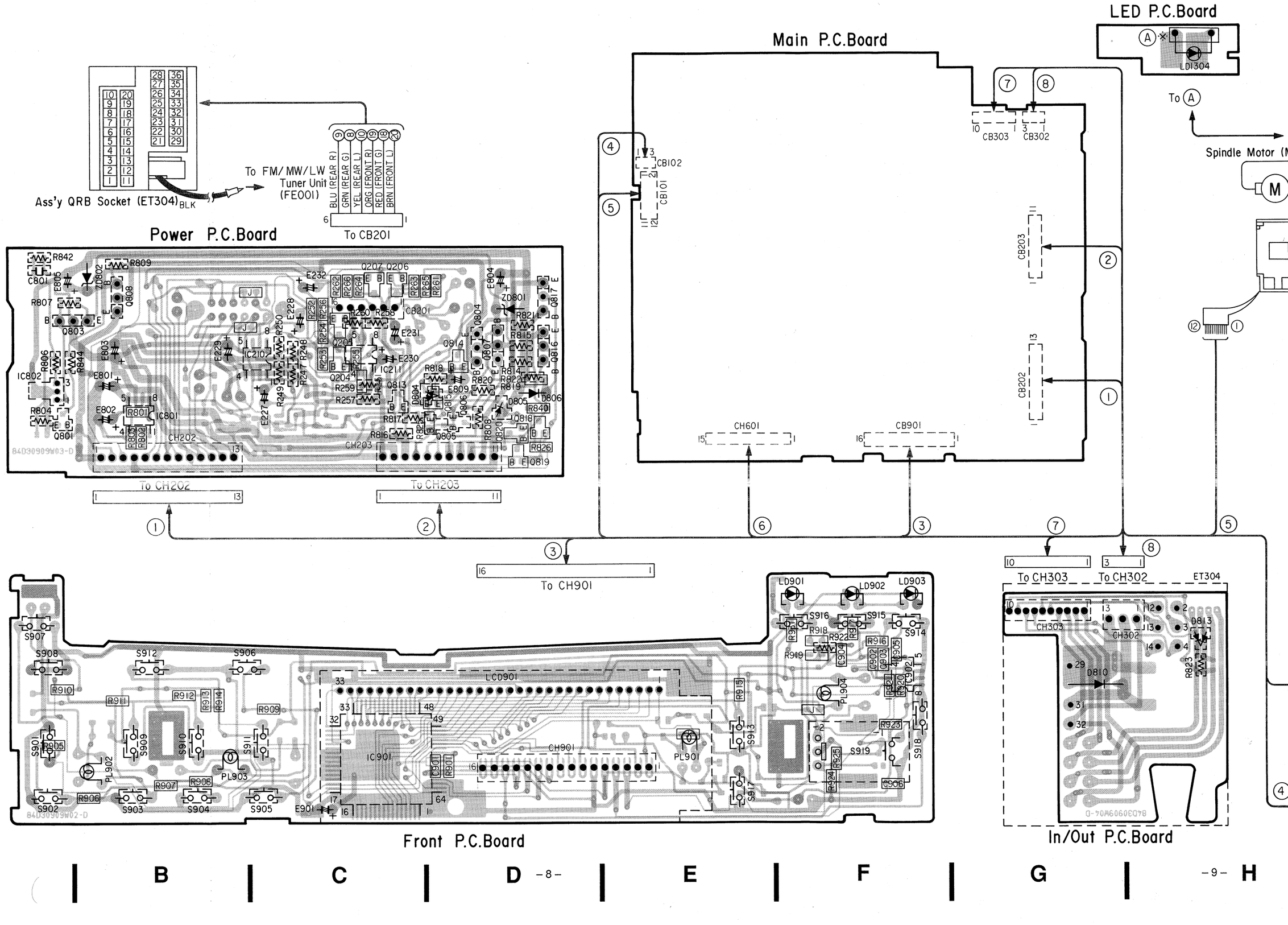
Orange Pattern : Component Side Pattern
Blue Pattern : Foil Side Pattern

Main P.C.Board (Foil Side View)

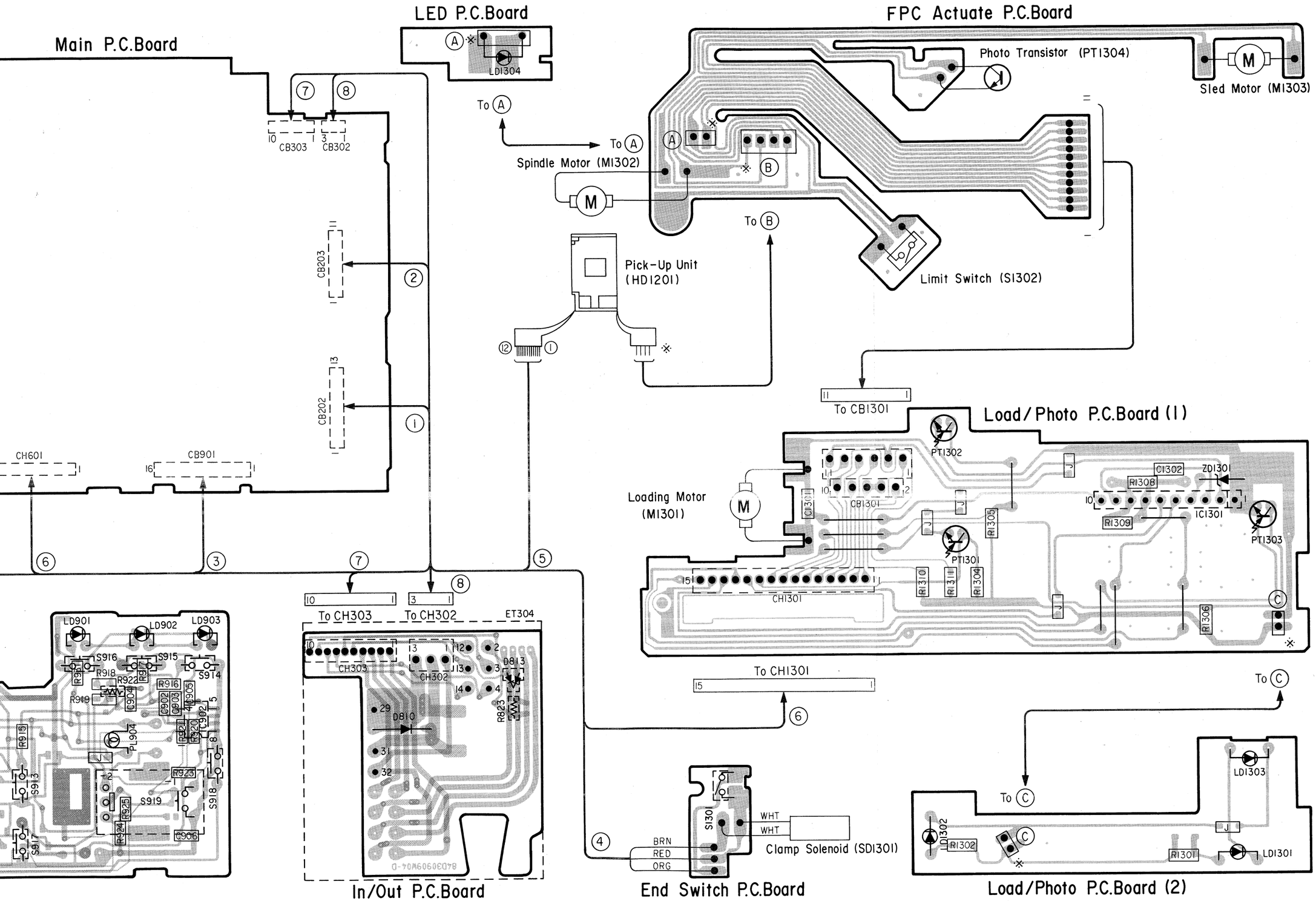


Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.

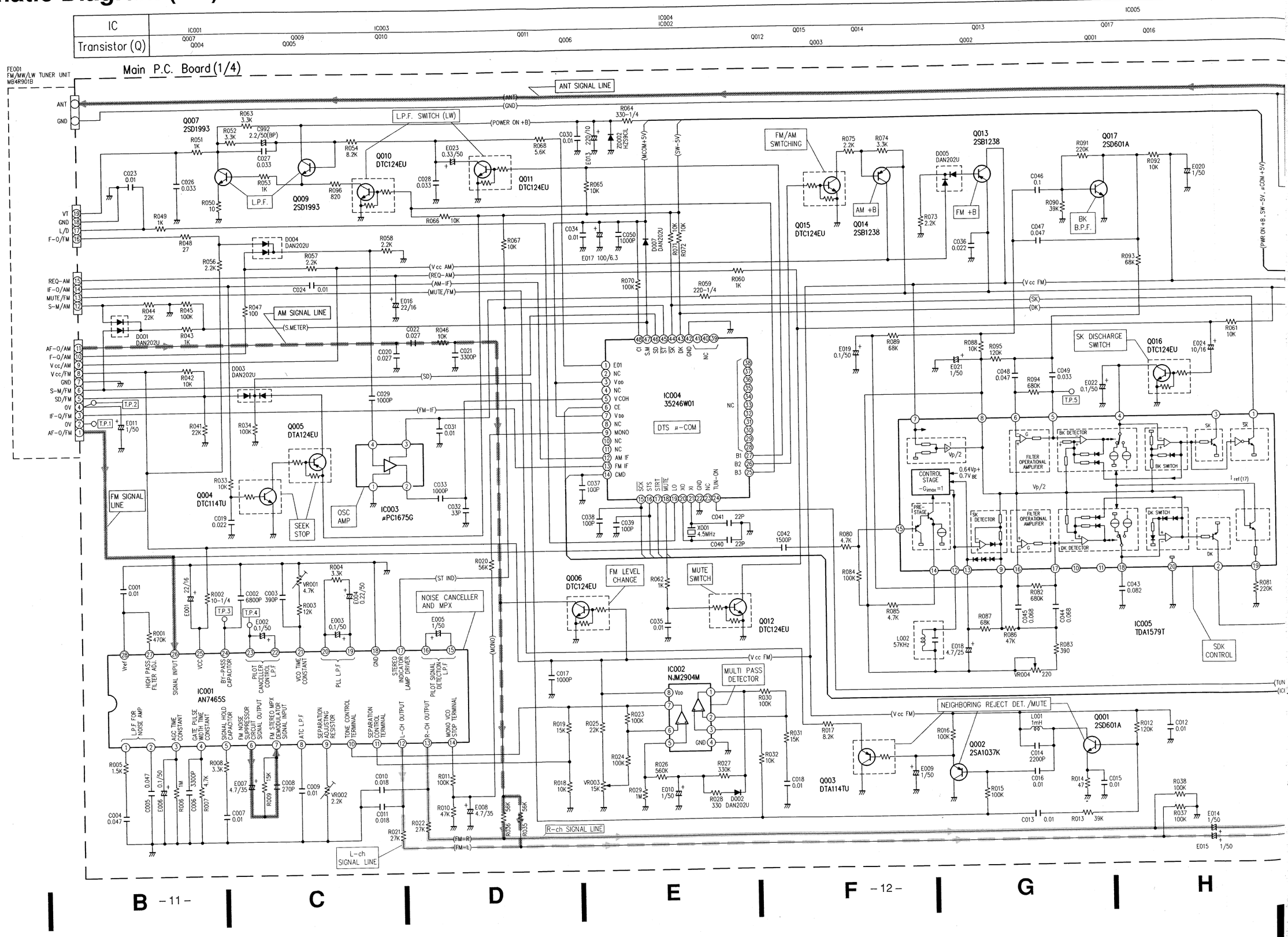


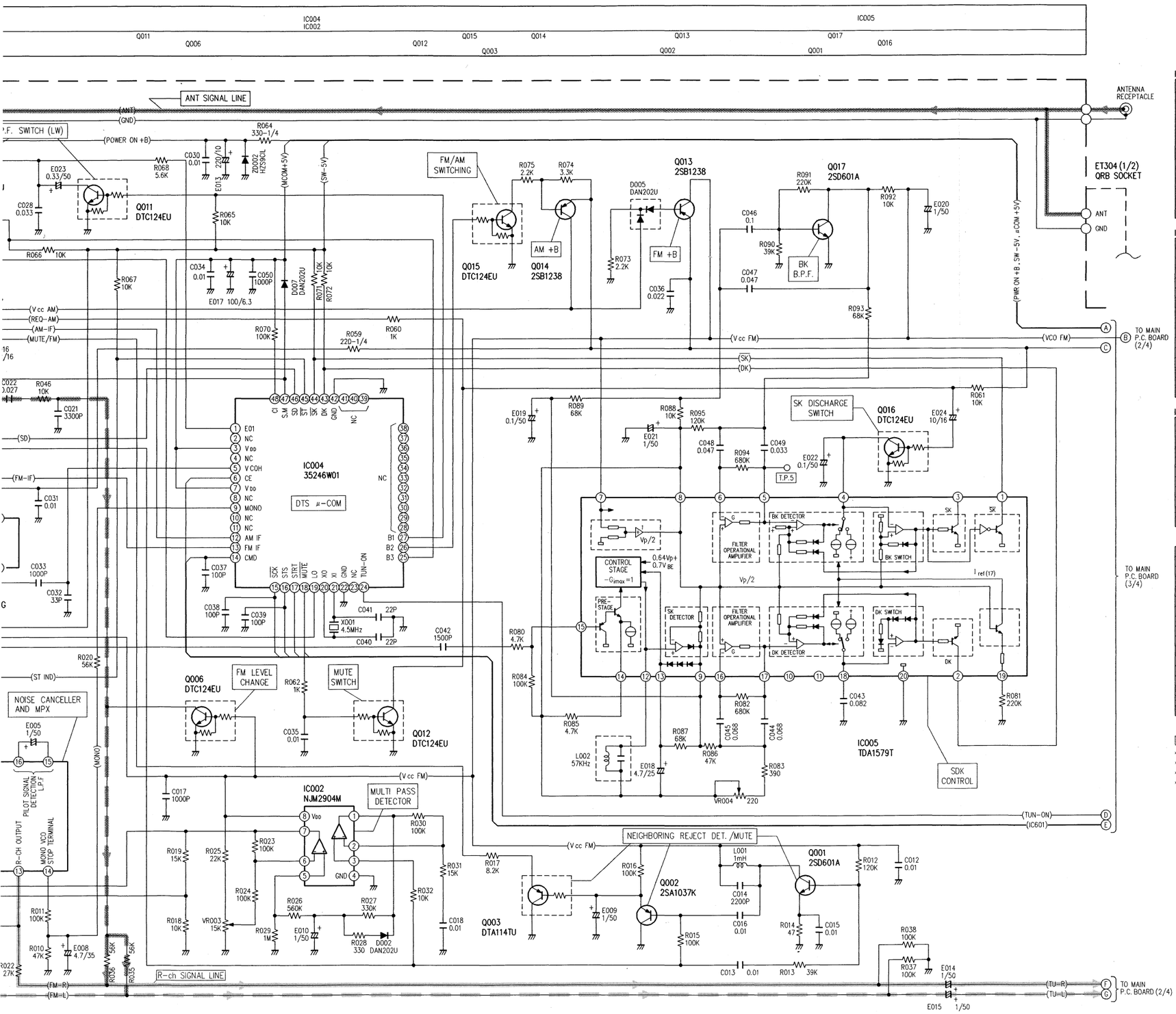
ards viewed from soldered side.



Orange Color Pattern : Component Side P
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/4)





IC001

1	2.3V	15	2.3V
2	1.7V	16	2.3V
3	1.3V	17	4.8V
4	0V	18	0V
5	2.4V	19	2.4V
6	1.3V	20	2.4V
7	1.1V	21	1.3V
8	0V	22	2.1V
9	0.25V	23	2.1V
10	4.5V	24	2.4V
11	1.7V	25	8.8V
12	2.8V	26	2.3V
13	2.8V	27	1.6V
14	0V	28	2.4V

IC002

1	0.1V
2	0.2V
3	0.2V
4	0V
5	0.2V
6	0.8V
7	0V
8	8.6V

IC003

1	3.9V
2	0V
3	1.1V
4	4.8V

IC004

1	1.2V	16	PS	30	NC	46	4.5V
2	1.4V	17	PS	31	NC	47	4.6V
3	5.1V	18	5.1V	32	NC	48	4.6V
4	1.7V	19	0V	33	NC		
5	3.2V	20	PS	34	NC		
6	5.1V	21	PS	35	NC		
7	0V	22	0V	36	NC		
8	0V	23	0V	37	NC		
9	0V/5.1V ST/MONO	24	5.1V/0V TUNER ON/OFF	38	NC		
				39	NC		
10	0V			40	NC		
11	0V	25	4.7V	41	NC		
12	0V	26	0V	42	0V		
13	0V	27	1.1V	43	0V		
14	PS	28	NC	44	4.2V		
15	PS	29	NC	45	4.2V		

IC005

1	4.2V/0V SDK ON/OFF	10	0V
		11	0.4V
		12	4.4V
2	0.1V	13	3.8V
3	0V	14	4.2V
4	0V	15	3.5V
5	4.3V	16	3.1V
6	3V	17	4.4V
7	4.7V	18	0.1V
8	4.3V	19	3.6V
9	4.4V	20	0V

	E	C	B
Q001	1.4V	8.1V	0.8V
Q002	0.2V	0V	0.7V
Q003	0.7V	0V	1.2V
Q004	0V	4.9V	0V
Q005	4.8V	0.2V	5V
Q006	8.6V	0V	0V
Q007	8V	8.6V	8.7V
Q009	0.6V	9.3V	1.2V
Q010	0V	0.6V	1V
Q011	1V	0V	0V
Q012	4.9V	0V	0V
Q013	8.7V	8.6V	8V
Q014	8.7V	0.5V	8.7V
Q015	0V	8.7V	0V
Q016	0.1V	0.1V	0V
Q017	0.6V	4.3V	0V

[Measuring Conditions]

* Power Supply Voltage : DC14V
* Measuring Meter : Digital Multi Voltmeter
* Measuring Point Reference : Between Ground
* Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS – 18).
  TUNER : No signal input
  FM : 98.1 MHz
  MW : 999 kHz
  LW : 216 kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

7915M 7915M

Schematic Diagram (2/4)

IC	IC103	IC109	IC102	IC106	IC104	IC101	IC201	IC105	IC202	IC203
Transistor (Q)	Q111 Q103 Q110	Q102	Q113	Q101	Q115 Q112	Q114 Q116	Q201	Q020 Q018 Q202	Q019 Q203	Q704 Q703

Main P.C. Board (2/4)

TO MAIN P.C.BOARD (1/4)

IC109 TC7SU04F — INVERTER

IC106 SM5840CS — SYSTEM CLOCK, TIMING CONTROLLER, DE EMPHASIS AND SOFT MUTE CONTROL, INPUT DATA INTERFACE, FILTER OPERATION AND ATTENUATION OPERATION BLOCK, INTERFACE OUTPUT DATA, DIGITAL FILTER

IC201 PCM67U — INPUT INTERFACE CIRCUIT, 1st ORDER NOISE SHAVER, DIGITAL OFFSET CIRCUIT, REFERENCE AND BIAS CIRCUIT, 1 BIT DAC, 10 BIT DAC, ANALOG CORRECTION CIRCUIT, Vcom BUFFER, D/A CONVERTER

IC101 TC9236F — DIGITAL SIGNAL PROCESSOR

IC102 TA8191F — FOCUS/TRACKING SERVO CONTROL

IC103 TCA0372M — SLED SERVO DRIVER, FOCUS SERVO DRIVER

IC104 TCA0372M — SPINDLE SERVO DRIVER, TRACKING SERVO DRIVER

IC105 LA6501-TL — REGULATOR (+5V), REGULATOR SWITCHING

IC202 BA4560F — I/V CONVERTER

IC203 BA4560F

Q111 2SD601A — SUB BEAM CONTROL

Q103 2SB1238 — LASER CONTROL

Q110 DTC114EU — SCRATCH CD

Q102 2SA-1037K — 5V SWITCH

Q101 DTC124EU — FOCUS SERVO GAIN SWITCH

Q115 DTA124EU — SCRATCH CD

Q113 DTC114TU — SCRATCH CD

Q112 DTC114TU

Q116 DTC124EU — SCRATCH CD

Q201 2SD601A

Q114 DTC124EU — REGULATOR (DAC)

Q020 DTC114TU — FM LEVEL CHANGE

Q018 DTC124EU

Q019 DTC114TU

Q202 DTC144EU — CD/TUNER SWITCH

Q203 DTC144EU — SDK-TONE SWITCH

Q704 2SD1858

Q703 2SB1182TL

HD1201 PICK-UP UNIT 1/2 — CB101 — LASER DIODE, PD, LD, VR 2KB

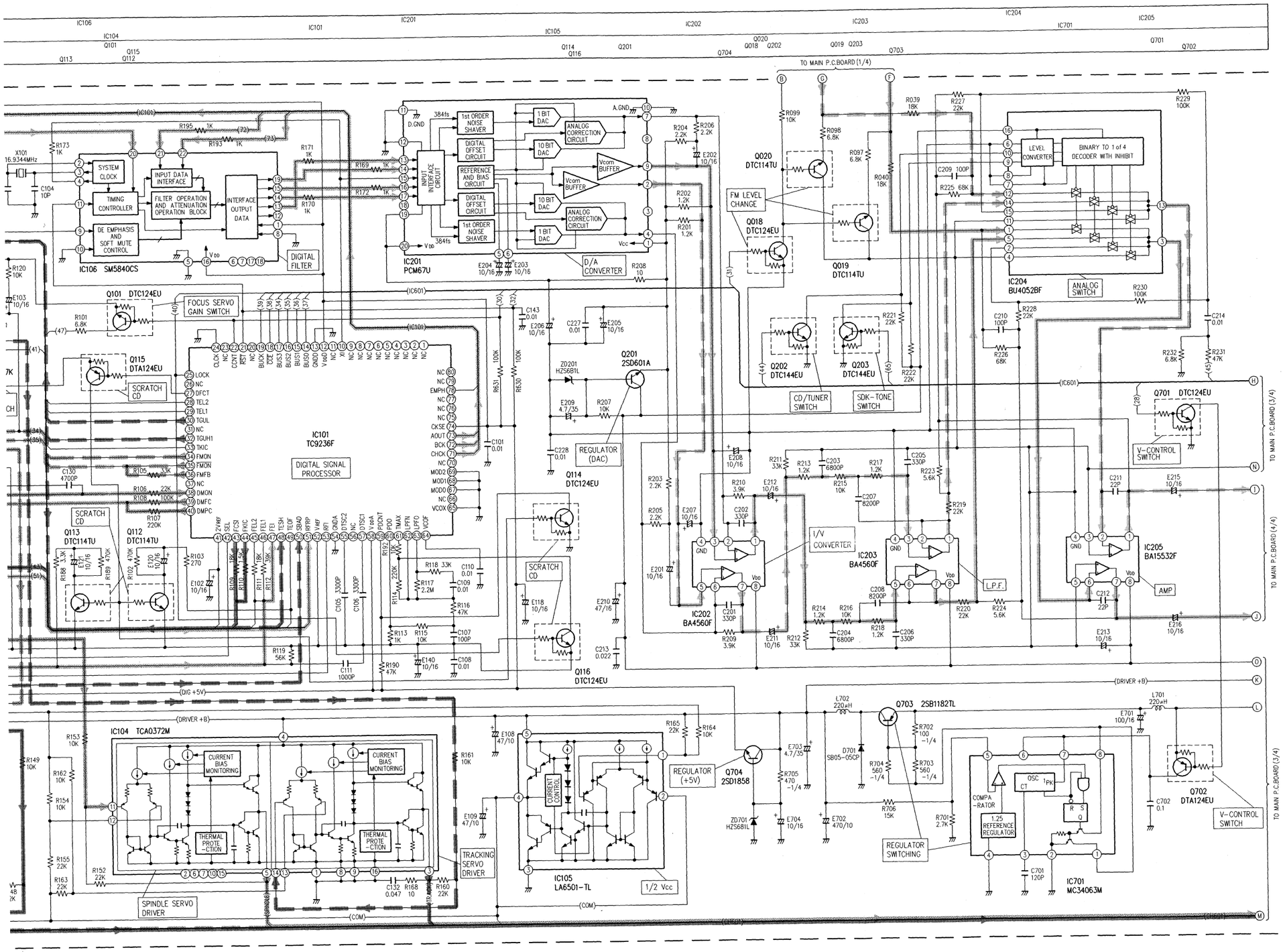
ZD201 HZS6B1L

ZD701 HZS681L

D701 SB05-05CP

L702 220μH

(DIG +5V) (DRIVER +B) (COM) (SLED) (SPINDLE) (FOCUS) (TRACKING) (IC601) (IC101)



IC101

1	4.8V	17	PS	33	1.7V	49	2.2V	65	0V
2	4.8V	18	PS	34	2.2V	50	2.5V	66	PS
3		19	PS	35	2.2V	51	2.4V	67	0.1V
4	PS	20	PS	36	2.1V	52	2.2V	68	0.1V
5	PS	21	5V	37	5V	53	PS	69	0.1V
6	PS	22	0V	38	2.2V	54	0.1V	70	PS
7	PS	23	PS	39	PS	55	2.6V	71	PS
8	PS	24	0V	40	PS	56	2.6V	72	PS
9	5.1V	25	5.1V	41	4.3V	57	5.6V	73	PS
10	2.5V	26	4.8V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	4.7V	43	2.6V	59	PS	75	0V
12	5.1V	28	2.2V	44	2.6V	60	PS	76	5V
13	0V	29	2.2V	45	2.2V	61	PS	77	5.1V
14	PS	30	2.2V	46	2.2V	62	2.3V	78	0V
15	PS	31	0.4V	47	2.2V	63	2.5V	79	5V
16	PS	32	0.4V	48	2.2V	64	1.6V	80	PS

IC102

1	1.7V	12	PS	23	5V	34	4.4V
2	2V	13	2.7V	24	PS	35	0V
3	2V	14	2V	25	2.1V	36	2.1V
4	2V	15	PS	26	PS	37	PS
5	2V	16	4.9V	27	PS	38	2V
6	3.9V	17	0V	28	2.1V	39	2V
7	0.1V	18	PS	29	2.1V	40	PS
8	2.1V	19	PS	30	2V	41	2V
9	PS	20	PS	31	2V	42	2.1V
10	PS	21	2.4V	32	2.1V	43	2.1V
11	2.1V	22	0V	33	PS	44	2.1V

IC103

1	0V	9	0V
2	0V	10	0V
3	4V	11	2.6V
4	8.5V	12	2.6V
5	3.5V	13	2.6V
6	0V	14	2.6V
7	0V	15	0V
8	0V	16	0V

IC104

1	0V	9	0V
2	0V	10	0V
3	4V	11	2.6V
4	8.5V	12	2.6V
5	3.5V	13	2.6V
6	0V	14	2.6V
7	0V	15	0V
8	0V	16	0V

IC105

1	2.6V		
2	4V		
3	0V		
4	4V		
5	8.5V		

IC106

1	5.1V	12	PS
2	2.6V	13	PS
3	2.6V	14	PS
4	PS	15	PS
5	0V	16	5.1V
6	0V	17	0V
7	0V	18	0V
8	5.1V	19	PS
9	0V	20	PS
10	0V	21	PS
11	4.9V	22	PS

IC201

1	5V	11	0V
2	3.5V	12	0.3V
3	0.4V	13	PS
4	3.5V	14	PS
5	3.2V	15	PS
6	4.2V	16	PS
7	3.5V	17	PS
8	0.4V	18	0V
9	3.5V	19	0V
10	0V	20	4.9V

IC109

1	0.1V		
2	0V		
3	0.1V		
4	0.2V		

IC202

1	AUDIO		
2	3.5V		
3	3.5V		
4	0V		
5	3.5V		
6	3.5V		
7	AUDIO		
8	8.3V		

IC203

1	AUDIO		
2	AUDIO		
3	AUDIO		
4	0V		
5	AUDIO		
6	AUDIO		
7	AUDIO		
8	8.3V		

IC205

1	AD 4.2V		
2	4.2V		
3	4.2V		
4	0V		
5	4.2V		
6	4.2V		
7	AUDIO		
8	8.3V		

IC204

1	AD 3.7V	9	0V
2	AD 4.1V	10	8V
3	4.2V	11	0V
4	0V	12	AD 3.7V
5	4.2V	13	4.2V
6	0V	14	4.2V
7	0V	15	AD 4V
8	0V	16	8.3V

IC701

1	13.7V
2	0V
3	0.2V
4	0V
5	0V
6	0V
7	0V
8	13.7V

	E	C	B		E	C	B
Q018	0V	6.4V	0V	Q114	0.1V	PS	0V
Q019	0V	4.6V	4.4V	Q115	0V	0V	0V
Q020	4.4V	4.6V	0V	Q116	0V	PS	5.1V
Q101	0V	0V	0V	Q201	5.7V	8.9V	5V
Q102	0V	0V	0V	Q202	5.1V	0V	0V
Q103	0V	0.1V	0V	Q203	3.5V	0V	0V
Q110	0V	0V	0V	Q701	0V	13.2V	0V
Q111	0V	0V	0V	Q702	13.2V	0V	13.8V
Q112	0V	0V	-0.4V	Q703	13.7V	0V	13.7V
Q113	0V	0V	0.1V	Q704	0V	0V	0V

[Measuring Conditions]

- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS – 18).
  TUNER : No signal input
  FM : 98.1 MHz
  MW : 999 kHz
  LW : 216kHz

CD Signal Line (Digital)
L–ch Signal Line
R–ch Signal Line
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/4)

IC	IC602	IC1301	IC601	IC902	IC803	IC901
Transistor (Q),(PT)	Q108 Q605 Q107 Q604 Q104 Q106 PT1304 Q603 Q105 PT1302 PT1303 PT1301 Q607 Q602 Q606	Q601	Q823	Q822	Q821	Q809 Q830 Q810

Main P.C. Board (3/4)

TO MAIN P.C. BOARD (1/4) — TO MAIN P.C. BOARD (2/4)

(POWER ON +B, SW-5V, μCOM +5V) (IC601) (IC601) (BATT) (CB202-5) (CB202-6) (IC206) (OUT INT) (BATT) (CB203-1) (CB203-2) (A MUTE) (OUT REM)

SD1301 CLAMP SOLENOID — S1301 CAM END SW — CB102 — SOLENOID DRIVER

Q104 2SB1240 — R175 10K — R176 1K -1/4 — Q106 DTC124EU

R174 10K — C604 0.01 — R177 470K — D102 DAN202U — C603 0.01 — Q105 2SD1383K — E106 10/16

Q606 DTA124EU (RESET) — Q607 DTC124EU — RESET CIRCUIT

Q108 DTC144EU — LOADING CONTROL — Q107 DTA114EU

R609 4.7K — E602 10/16 — IC602 S-8052HNM-CR (OUT, Vref)

RESET CIRCUIT — Q604 DTA124EU — D602 DAN202U

Q605 DTC144EU — WATCH DOG — Q602 DTC124EU — R605 100K — Q603 DTC144EU — E601 47/10 — D601 DAN202U — C601 0.01

R608 33K — R612 100K — R613 100K — X601 4.19MHz — R633 100K — R629 33K — R628 R627 R626 100K x3 — R632 22K — D603 DAN202U — E603 22/16 — V-OUT SWITCHING — Q601 DTA124EU

IC601 35139W01 μ-COM

(A-HOLD) (B-HOLD) (RESET) (PULL UP) (SW 5V) (μCOM +5V) (MUTE) (LOAD CONT) (DRIVER +B)

R616 100K — R622 100K — R615 22K — R621 10K — R620 10K — R617 10K — R618 10K — R619 10K — ZD601 HZS5BLL — R614 10K — TH601 100K — R601 100K — R610 100K

D809 DAN202U — D808 DAN202U — R845 100K — E812 470/10 — R835 10K — BA601 CR2032 — Q823 DTA124EU — E811 10/16 — SWITCHING 5V

IC803 S-8054ALO-LO (Vref, OUT) — BATTERY VOLTAGE DETECTOR

R827 3.3K -1/4 — R828 47K -1/8 — ZD804 HZS6B1L — R810 22K — Q809 DTA114EU

Q822 DTA114EU — R831 10K — R832 82K — R830 100K — ACC DETECTOR — Q821 2SD601A — D807 DAN202U — R829 10K — E810 1/50

Q830 2SD2008Q — LAMP +B — C803 0.01 — E815 1/50 — ZD807 HZS11B1L

(ACC) (POWER ON) (IN PAUSE) (IN INT) (SW 5V) (B-HOLD) (A-HOLD) (PULL UP) (MUTE) (POWER ON) (IN INT) (IN PAUSE) (KNOB IND) (LCD IND)

R602 R603 R604 10K x 3

TO MAIN P.C. BOARD (2/4)

CH601 — CH1301

HD1201 PICK-UP UNIT 2/2 — FOCUS COIL — TRACKING COIL — (LIMIT-SW) (TRACKING) (FOCUS) (SPINDLE) (SLED)

S1302 LIMIT SW — M1302 SPINDLE MOTOR — M1303 SLED MOTOR — CB1301

8cm CD RELOAD DETECTOR — 8cm CD END DETECTOR — CD Mechanism (DP24A210) — PT1304 PT360 — PT1302 PT360 — PT1303 PT360 — PT1301 PT360 — CD IN/OUT DETECTOR — 12cm CD EJECT END DETECTOR

R1310 560 — R1311 100K — R1305 100K — R1306 100K — R1304 100K — R1308 4.7 -1/4 — R1309 4.7 -1/4

IC1301 LB1641 — INPUT LOGIC BLOCK — PRE-DRIVER — LOADING MOTOR DRIVER — ZD1301 UTZJ6.2C — C1301 0.01 — C1302 0.01 — M1301 LOADING MOTOR

LD1304 AN501-B1 — LED P.C. Board

R1302 560 — R1301 390 — LD1301 LD1302 LD1303 — AN501-B1

Load / Photo (2) P.C. Board — Load / Photo (1) P.C. Board

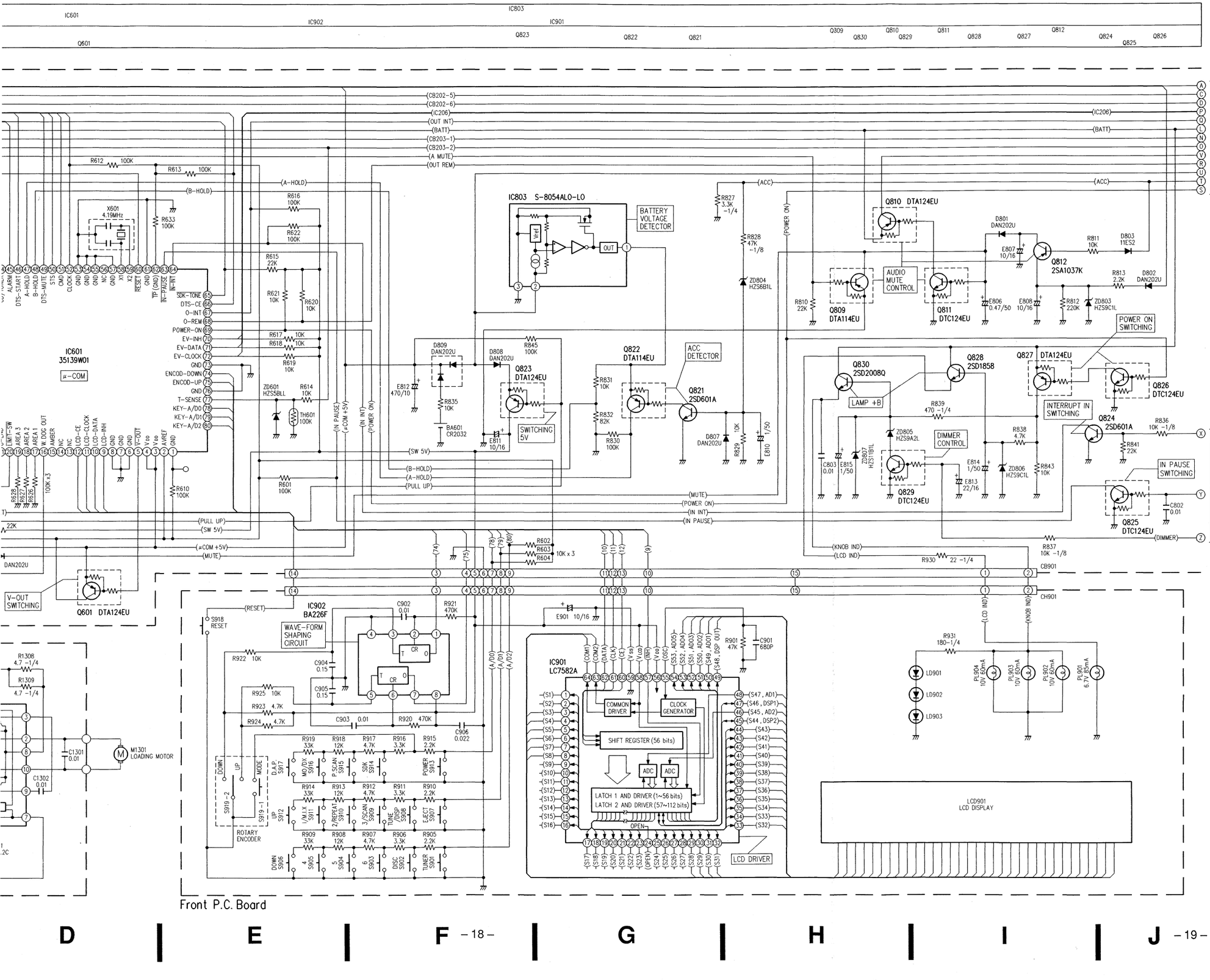
IC902 BA226F — WAVE-FORM SHAPING CIRCUIT — C902 0.01 — R921 470K — C904 0.15 — C905 0.15 — C903 0.01 — R920 470K — C906 0.022 — R922 10K — R925 10K — R923 4.7K — R924 4.7K

S918 RESET — ROTARY ENCODER — S919-1 S919-2 — UP S912 — DOWN S906 — D.A.P. S917 — MO/DX S916 — P.SCAN S915 — SDK S914 — POWER S913 — I/M.I.X S911 — 2/REPEAT S910 — 3/SCAN S909 — ONE TOUCH/DISP S908 — EJECT S907 — 4 S905 — 5 S904 — 6 S903 — DISC S902 — TUNER S901

E901 10/16 — R901 47K — C901 680P

IC901 LC7582A — COMMON DRIVER — CLOCK GENERATOR — SHIFT REGISTER (56 bits) — ADC ADC — LATCH 1 AND DRIVER (1~56 bits) — LATCH 2 AND DRIVER (57~112 bits) — OPEN — LCD DRIVER

Front P.C. Board



IC601

1	4.6V/0V	18	5V	33	0V	42	0V	59	PS	68	0V/5V
2	5.1V/0V	19	5V	34	PS	43	5.1V/0V	60	5V		O-REM OFF/ON
3	5V/6V	20	0V/4.6V		CD	44	5.1V/0V	61	0V		
4	5V/8V	21	0V	35	PS	45	0V/PS	62	5V	69	2.8V/0V
5	0V/5.3V	22	0V		CD	46	PS		5V/0V		POW ON/OFF
6	0V	23	0V	36	PS	47	5.4V/0V	63	IN-INT OFF/ON	70	PS
7	0V	24	0V		CD	48	4.8V/0V			71	PS
8	0V	25	0V	37	PS	49	PS		5V/0V	72	PS
9	5.1V	26	0V		CD	50	PS	64	IN-PAUSE OFF/ON	73	0V
10	PS	27	5V	38	PS	51	PS			74	PS
11	PS	28	0V/5.1V		CD	52	PS		5V/0V	75	PS
12	PS		TUNER/CD	39	PS	53	0V	65	SDK-TONE OFF/ON	76	0V
13	0V	29	0V		CD	54	0V			77	5V
14	0V	30	0V	40	5.1V	55	0V	66	PS	78	5V
15	5.1V/0V	31	5.1V/0V		CD	56	0V		0V/5V	79	5V
16	PS	32	0V/5V	41	0V/5.1V	57	0V	67	O-INT OFF/ON	80	5V
17	5V		TUNER/CD		DISC IN/OUT	58	PS				

IC602

1	5.1V
2	5.1V
3	0V

IC803

1	5.4V
2	5.8V
3	0V

IC901

1	NC	17	NC	33	PS	49	PS
2	NC	18	NC	34	PS	50	PS
3	PS	19	NC	35	PS	51	PS
4	PS	20	NC	36	PS	52	PS
5	PS	21	NC	37	PS	53	PS
6	PS	22	NC	38	PS	54	NC
7	PS	23	NC	39	PS	55	0V
8	PS	24	NC	40	PS	56	5V
9	NC	25	NC	41	PS	57	PS
10	NC	26	NC	42	PS	58	5V
11	NC	27	NC	43	PS	59	PS
12	NC	28	NC	44	PS	60	0V
13	NC	29	PS	45	PS	61	PS
14	NC	30	PS	46	PS	62	PS
15	NC	31	PS	47	PS	63	PS
16	NC	32	PS	48	PS	64	PS

IC902

1	0.1V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0.1V
8	0V

IC1301

1	0V
2	6V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	6V

	E	C	B		E	C	B
Q104	14V	0V	0V	Q821	0.6V	0V	0V
Q105	0V	0V	0V	Q822	0V	5.4V	5.4V
Q106	0V	13.6V	0V	Q823	0.2V	5.2V	5.2V
Q107	5.1V	−0.1V	5.1V	Q824	0V	5V	0V
Q108	0V	5.1V	0V	Q825	0V	4.9V	0V
Q601	0V	5.1V	5.1V	Q826	2.7V	0V	0V
Q602	0V	5.1V	0V	Q827	14V	0V	14V
Q603	0.2V	0.1V	0V	Q828	11.6V	13.8V	13.3V
Q604	5.2V	0V	5.1V	Q829	0V	2V	0V
Q605	0V	0.1V	0V	Q830	9.3V	13.8V	10V
Q606	5.1V	0V	4.9V				
Q607	0V	4.9V	0V				
Q809	5.1V	0V	5.1V				
Q810	13.7V	3.3V	13.7V				
Q811	0V	13.7V	0V				
Q812	8.5V	0.1V	9.1V				

[Measuring Conditions]
* Power Supply Voltage : DC14V
* Measuring Meter : Digital Multi Voltmeter
* Measuring Point Reference : Between Ground
* Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS − 18).
  TUNER : No signal input
  FM : 98.1 MHz
  MW : 999 kHz
  LW : 216 kHz

Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

7915M 7915M

Schematic Diagram (4/4)

IC	IC207	IC802	IC801	IC206	IC208 IC213	IC209 IC214	IC211	IC210
Transistor (Q)	Q803	Q813 Q814	Q801	Q804 Q805	Q815 Q816	Q807 Q806 Q818	Q817 Q819	Q808 Q820	Q206 Q204 Q207 Q205

Main P.C. Board (4/4)

Main P.C. Board (2/4)

L-ch SIGNAL LINE

R-ch SIGNAL LINE

IC207 NJM4580E

IC208 NJM4580E

IC209 NJM4580E

BUFFER AMP

TONE AMP

L-BLOCK

R-BLOCK

DECODER

LATCH

SHIFT REGISTER

CONTROL

IC206 LC7537AN

IC213 BA4560F

IC214 BA4560F

Main P.C. Board (3/4)

Power P.C. Board

IC801 BA4560F

IC802 M5236ML

AUDIO +B 1/2 Vcc

REGULATOR +8V

ASO PROTECTOR

OVER CURRENT PROTECTOR

START CIRCUIT

REF. VOLT GENERATOR

POWER ON SWITCHING

TUNER SWITCHING

TUNER +B

μ-COM +B

PROTECTION CIRCUIT

POWERANTENNA SWITCHING

OUT REMOTE SWITCHING

INTERRUP OUT SWITCHING

IC210 BA15532F

IC211 BA15532F

PRE AMP

MUTING

IC206											
1	3.8V	13	AD 4.4V	25	AD 4.4V	37	4.4V
2	4.1V	14	AD 4.4V	26	4.4V	38	AD 4.4V
3	0V	15	0V	27	AD 4.4V	39	AD 4.4V
4	AD 4.1V	16	0V	28	4.4V	40	AD 4.4V
5	AD 3.9V	17	0V	29	AD 4.4V	41	NC
6	3.9V	18	0V	30	NC	42	8.3V
7	NC	19	8.3V	31	AD 4.4V	43	8.3V
8	AD 4.4V	20	0V	32	AD 4.4V	44	NC
9	4.4V	21	5V	33	AD 4.4V	45	AD 4.4V
10	AD 4.4V	22	5.1V	34	NC	46	AD 4.4V
11	AD 4.4V	23	0V	35	4.4V	47	AD 4.4V
12	4.4V	24	AD 4.4V	36	3.7V	48	NC

IC207	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC208	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC209	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC210	
1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC211	
1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC213	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC214	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.1V
6	4.1V
7	4.1V
8	8.3V

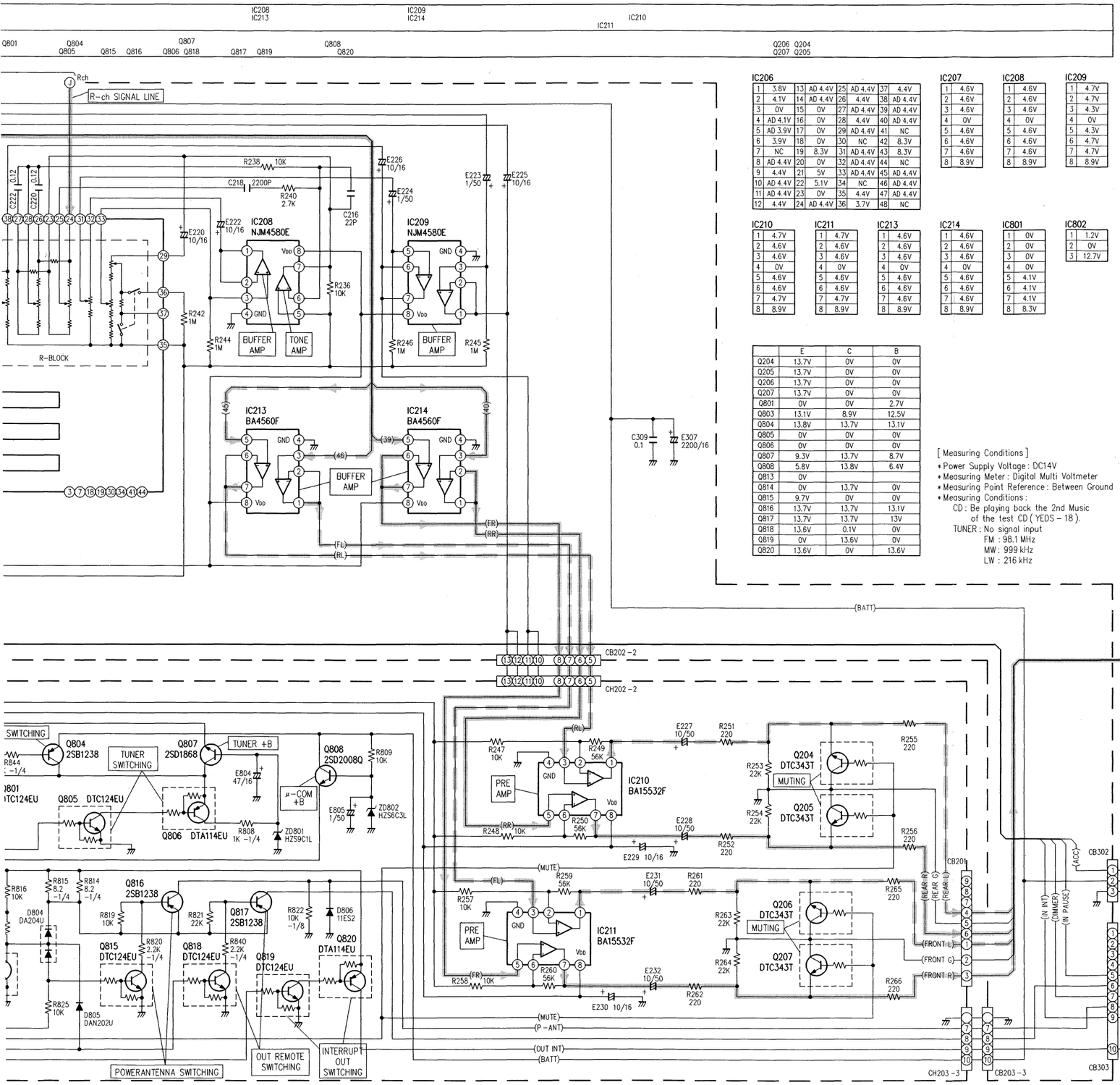
IC801	
1	0V
2	0V
3	0V
4	0V
5	4.1V
6	4.1V
7	4.1V
8	8.3V

IC802	
1	1
2	0
3	12

	E	C	B
Q204	13.7V	0V	0V
Q205	13.7V	0V	0V
Q206	13.7V	0V	0V
Q207	13.7V	0V	0V
Q801	0V	0V	2.7V
Q803	13.1V	8.9V	12.5V
Q804	13.8V	13.7V	13.1V
Q805	0V	0V	0V
Q806	0V	0V	0V
Q807	9.3V	13.7V	8.7V
Q808	5.8V	13.8V	6.4V
Q813	0V		
Q814	0V	13.7V	0V
Q815	9.7V	0V	0V
Q816	13.7V	13.7V	13.1V
Q817	13.7V	13.7V	13V
Q818	13.6V	0.1V	0V
Q819	0V	13.6V	0V
Q820	13.6V	0V	13.6V

[Measuring Conditions]

* Power Supply Voltage : DC14V
* Measuring Meter : Digital Multi Voltmet
* Measuring Point Reference : Between C
* Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS – 18).
  TUNER : No signal input
  FM : 98.1 MHz
  MW : 999 kHz
  LW : 216 kHz



IC206

1	3.8V	13	AD 4.4V	25	AD 4.4V	37	4.4V
2	4.1V	14	AD 4.4V	26	4.4V	38	AD 4.4V
3	0V	15	0V	27	AD 4.4V	39	AD 4.4V
4	AD 4.1V	16	0V	28	4.4V	40	AD 4.4V
5	AD 3.9V	17	0V	29	AD 4.4V	41	NC
6	3.9V	18	0V	30	NC	42	8.3V
7	NC	19	8.3V	31	AD 4.4V	43	8.3V
8	AD 4.4V	20	0V	32	AD 4.4V	44	NC
9	4.4V	21	5V	33	AD 4.4V	45	AD 4.4V
10	AD 4.4V	22	5.1V	34	NC	46	AD 4.4V
11	AD 4.4V	23	0V	35	4.4V	47	AD 4.4V
12	4.4V	24	AD 4.4V	36	3.7V	48	NC

IC207

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC208

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC209

1	4.7V
2	4.7V
3	4.3V
4	0V
5	4.3V
6	4.7V
7	4.7V
8	8.9V

IC210

1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC211

1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC213

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC214

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC801

1	0V
2	0V
3	0V
4	0V
5	4.1V
6	4.1V
7	4.1V
8	8.3V

IC802

1	1.2V
2	0V
3	12.7V

	E	C	B
Q204	13.7V	0V	0V
Q205	13.7V	0V	0V
Q206	13.7V	0V	0V
Q207	13.7V	0V	0V
Q801	0V	0V	2.7V
Q803	13.1V	8.9V	12.5V
Q804	13.8V	13.7V	13.1V
Q805	0V	0V	0V
Q806	0V	0V	0V
Q807	9.3V	13.7V	8.7V
Q808	5.8V	13.8V	6.4V
Q813	0V		
Q814	0V	13.7V	0V
Q815	9.7V	0V	0V
Q816	13.7V	13.7V	13.1V
Q817	13.7V	13.7V	13V
Q818	13.6V	0.1V	0V
Q819	0V	13.6V	0V
Q820	13.6V	0V	13.6V

[Measuring Conditions]

- Power Supply Voltage: DC14V
- Measuring Meter: Digital Multi Voltmeter
- Measuring Point Reference: Between Ground
- Measuring Conditions:
  - CD: Be playing back the 2nd Music of the test CD (YEDS – 18).
  - TUNER: No signal input
    - FM : 98.1 MHz
    - MW: 999 kHz
    - LW : 216 kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

Electrical Parts List

Note : The parts is not mentioned, refer to the Service Manual 7915M (Part No. 68P40469W02).

Symbol No.	Part No.	Description
Main P. C. Board		
IC's		
IC213	51T92001F01	BA4560F
IC214	51T92001F01	BA4560F
IC803	51T95014F16	S-8054ALO-LO
Transistors		
Q103	48T84234F03	2SB1238
Q703	48T35437W01	2SB1182TL
Coil		
L002	24T84175F51	SDK (57kHz)
Capacitors		
E001	23S61523F13	ELY., 22μF/16V
C003	08T35388W30	PPS, 390pF
E007	23T25149W15	ELY., 4.7μF/35V
E008	23T25149W15	ELY., 4.7μF/35V
C010	08S65128F77	CP., 0.018μF
C011	08S65128F77	CP., 0.018μF
E013	23S16086W01	ELY., 220μF/10V
E016	23S61523F13	ELY., 22μF/16V
C022	08T960316F22	TF, 0.027μF
C050	08S65128F57	CP., 1000pF
C124	08S82122F06	CP., 3pF
E201	23T25149W09	ELY., 10μF/16V
E202	23T25149W09	ELY., 10μF/16V
E207	23T25149W09	ELY., 10μF/16V
E208	23T25149W09	ELY., 10μF/16V
E213	23T74437F32	TAN., 10μF/16V
E603	23S61523F13	ELY., 22μF/16V
E701	23S82482F02	ELY., 100μF/16V
C803	08S65128F69	CP., 0.01μF
E812	23T90882F18	ELY., 470μF/10V
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R013	06S64995F91	39K ohm
R035	06S64995F95	56K ohm
R036	06S64995F95	56K ohm
R039	06S64995F83	18K ohm
R040	06S64995F83	18K ohm
R046	06S64995F77	10K ohm
R096	06S64995F51	820 ohm
R179	06S64995F63	2.7K ohm
R192	06S64995F77	10K ohm
R195	06S64995F53	1K ohm
R203	06S64995F61	2.2K ohm
R204	06S64995F61	2.2K ohm
R205	06S64995F61	2.2K ohm
R206	06S64995F61	2.2K ohm
R225	06S64995F97	68K ohm
R226	06S64995F97	68K ohm
R608	06S64995F89	33K ohm
R629	06S64995F89	33K ohm
R845	06S64996F02	100K ohm
VR102	18T15356W14	Variable, 1.5K ohm
Power P. C. Board		
Transistors		
Q803	48T84234F03	2SB1238
Q804	48T84234F03	2SB1238
Q816	48T84234F03	2SB1238
Q817	48T84234F03	2SB1238
Capacitors		
E227	23T45102W25	ELY., 10μF/50V
E228	23T45102W25	ELY., 10μF/50V
E231	23T45102W25	ELY., 10μF/50V
E232	23T45102W25	ELY., 10μF/50V
Front P. C. Board		
LED's		
LD901	48T16167W12	MBG486K (GRN)
LD902	48T16167W12	MBG486K (GRN)
LD903	48T16167W12	MBG486K (GRN)
Lamp		
PL901	65T95083F01	6.7V-85mA
Switches		
S901	40T10876W22	Tact, SKHLBC (TUNER)
S902	40T10876W22	Tact, SKHLBC (DISC)
S903	40T10876W22	Tact, SKHLBC (6)
S904	40T10876W22	Tact, SKHLBC (5)
S905	40T10876W22	Tact, SKHLBC (4)
S906	40T10876W22	Tact, SKHLBC (DN)
S907	40T10876W22	Tact, SKHLBC (▲)

Symbol No.	Part No.	Description
S908	40T10876W22	Tact, SKHLBC (TUNER / DISP)
S909	40T10876W22	Tact, SKHLBC (3 / SCAN)
S910	40T10876W22	Tact, SKHLBC (2 / REPEAT)
S911	40T10876W22	Tact, SKHLBC (1 / M.I.X)
S912	40T10876W22	Tact, SKHLBC (UP)
S913	40T10876W22	Tact, SKHLBC (POWER)
S914	40T10876W22	Tact, SKHLBC (SDK)
S915	40T10876W22	Tact, SKHLBC (P.SCAN)
S916	40T10876W22	Tact, SKHLBC (MO / DX)
S917	40T10876W22	Tact, SKHLBC (D.A.P)
S918	40T10876W22	Tact, SKHLBC (RESET)

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R907	06S64995F69	4.7K ohm
R912	06S64995F69	4.7K ohm
R917	06S64995F69	4.7K ohm
IN / OUT P. C. Board		
Diode		
D810	48T81044F01	10E2

Packing Assembly Parts List

Note : The parts is not mentioned, refer to the Service Manual 7915M (Part No. 68P40469W02).

Symbol No.	Part No.	Description
108-3	01T35620W09	Assy., QRB Connector

Symbol No.	Part No.	Description

Cabinet Assembly Parts List

Note : The parts is not mentioned, refer to the Service Manual 7915M (Part No. 68P40469W02).

Symbol No.	Index	Part No.	Description
23	2-F	04B41345P11	Washer, Lock (M1.2)

Symbol No.	Index	Part No.	Description

Schematic Diagram (1/4)

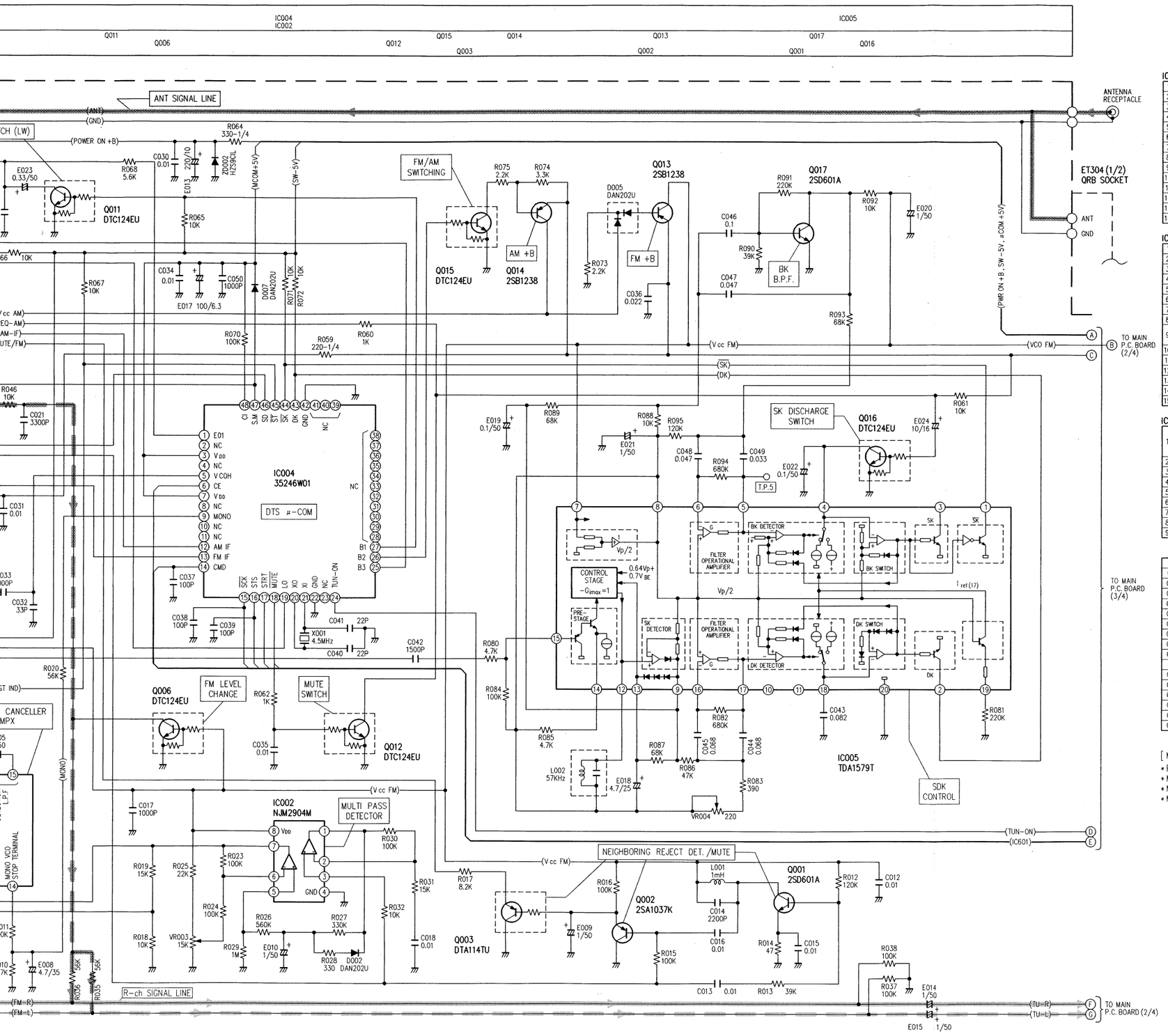
IC	IC001	IC003	IC004 IC002	IC005
Transistor (Q)	Q007 Q004 Q009 Q005	Q010 Q011 Q006	Q012 Q015 Q003 Q014 Q002 Q013 Q001 Q017 Q016	

Main P.C. Board (1/4)

FE001
FM/MW/LW TUNER UNIT
MB4R901B

ANT SIGNAL LINE

Q007 2SD1993
Q010 DTC124EU
Q011 DTC124EU
Q009 2SD1993
L.P.F. SWITCH (LW)
L.P.F.
FM/AM SWITCHING
Q015 DTC124EU
Q014 2SB1238
Q013 2SB1238
Q017 2SD601A
AM +B
FM +B
BK B.P.F.
D004 DAN202U
D001 DAN202U
D003 DAN202U
D005 DAN202U
D007 DAN202U
D002 HZS9CIL
AM SIGNAL LINE
FM SIGNAL LINE
Q005 DTA124EU
Q004 DTC114TU
SEEK STOP
OSC AMP
IC003 μPC1675G
IC004 35246W01
DTS μ-COM
Q006 DTC124EU
FM LEVEL CHANGE
MUTE SWITCH
Q012 DTC124EU
IC001 AN7465S
NOISE CANCELLER AND MPX
IC002 NJM2904M
MULTI PASS DETECTOR
Q003 DTA114TU
Q002 2SA1037K
Q001 2SD601A
NEIGHBORING REJECT DET. /MUTE
SK DISCHARGE SWITCH
Q016 DTC124EU
IC005 TDA1579T
SDK CONTROL
R-ch SIGNAL LINE
L-ch SIGNAL LINE



IC001

1	2.3V	15	2.3V
2	1.7V	16	2.3V
3	1.3V	17	4.8V
4	0V	18	0V
5	2.4V	19	2.4V
6	1.3V	20	2.4V
7	1.1V	21	1.3V
8	0V	22	2.1V
9	0.25V	23	2.1V
10	4.5V	24	2.4V
11	1.7V	25	8.8V
12	2.8V	26	2.3V
13	2.8V	27	1.6V
14	0V	28	2.4V

IC002

1	0.1V
2	0.2V
3	0.2V
4	0V
5	0.2V
6	0.8V
7	0V
8	8.6V

IC003

1	3.9V
2	0V
3	1.1V
4	4.8V

IC004

1	1.2V	16	PS	30	NC	46	4.5V
2	1.4V	17	PS	31	NC	47	4.6V
3	5.1V	18	5.1V	32	NC	48	4.6V
4	1.7V	19	0V	33	NC		
5	3.2V	20	PS	34	NC		
6	5.1V	21	PS	35	NC		
7	0V	22	0V	36	NC		
8	0V	23	0V	37	NC		
9	0V/5.1V ST/MONO	24	5.1V/0V TUNER ON/OFF	38	NC		
10	0V			39	NC		
11	0V	25	4.7V	40	NC		
12	0V	26	0V	41	NC		
13	0V	27	1.1V	42	0V		
14	PS	28	NC	43	4.2V		
15	PS	29	NC	44	4.2V		
				45	4.2V		

IC005

1	4.2V/0V SDK ON/OFF	10	0V
		11	0.4V
		12	4.4V
2	0.1V	13	3.8V
3	0V	14	4.2V
4	0V	15	3.5V
5	4.3V	16	3.1V
6	3V	17	4.4V
7	4.7V	18	0.1V
8	4.3V	19	3.6V
9	4.4V	20	0V

	E	C	B
Q001	1.4V	8.1V	0.8V
Q002	0.2V	0V	0.7V
Q003	0.7V	0V	1.2V
Q004	0V	4.9V	0V
Q005	4.8V	0.2V	5V
Q006	8.6V	0V	0V
Q007	8V	8.6V	8.7V
Q009	0.6V	9.3V	1.2V
Q010	0V	0.6V	1V
Q011	1V	0V	0V
Q012	4.9V	0V	0V
Q013	8.7V	8.6V	8V
Q014	8.7V	0.5V	8.7V
Q015	0V	8.7V	0V
Q016	0.1V	0.1V	0V
Q017	0.6V	4.3V	0V

[Measuring Conditions]

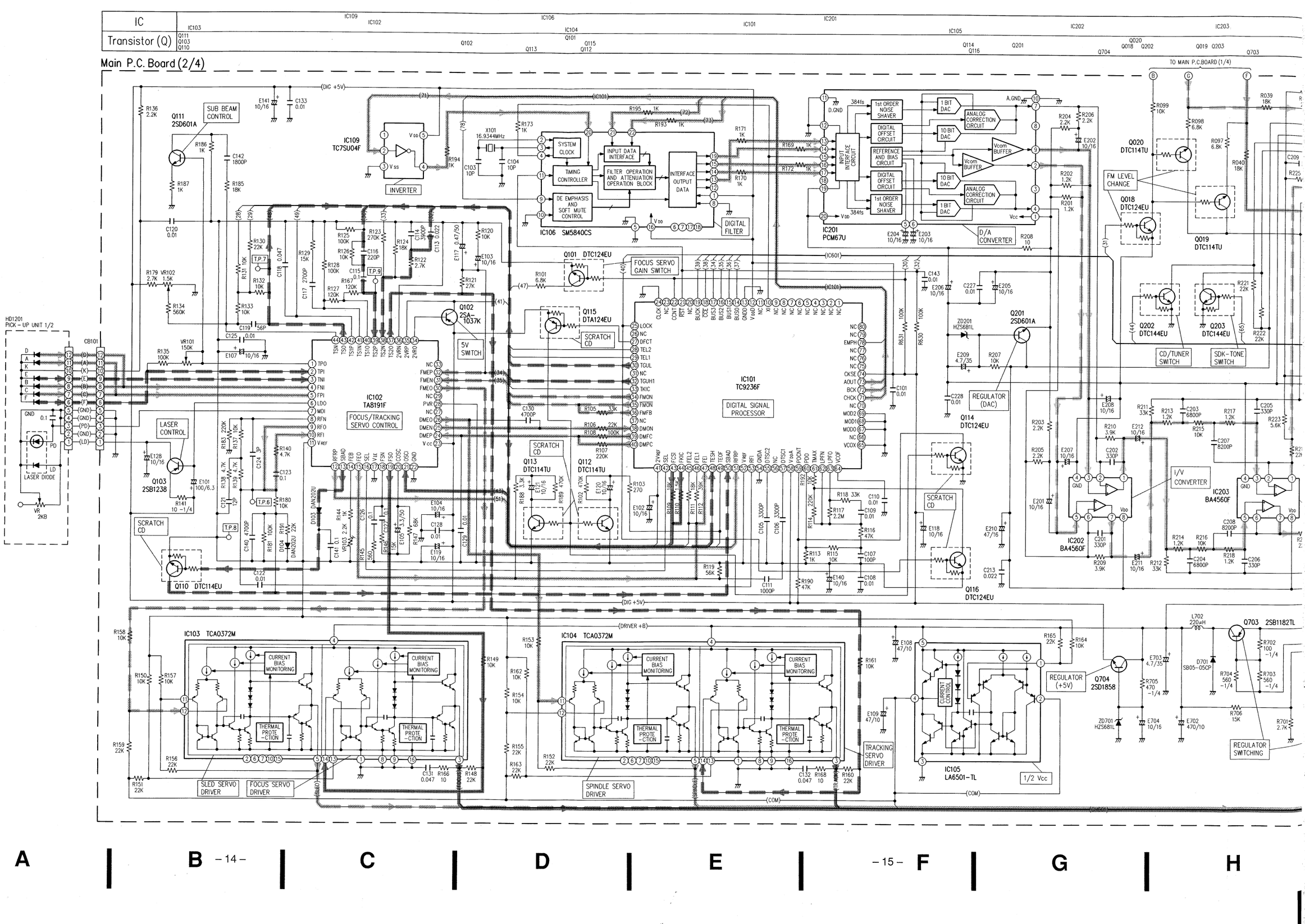
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  - CD : Be playing back the 2nd Music of the test CD (YEDS – 18).
  - TUNER : No signal input
    - FM : 98.1 MHz
    - MW : 999 kHz
    - LW : 216 kHz

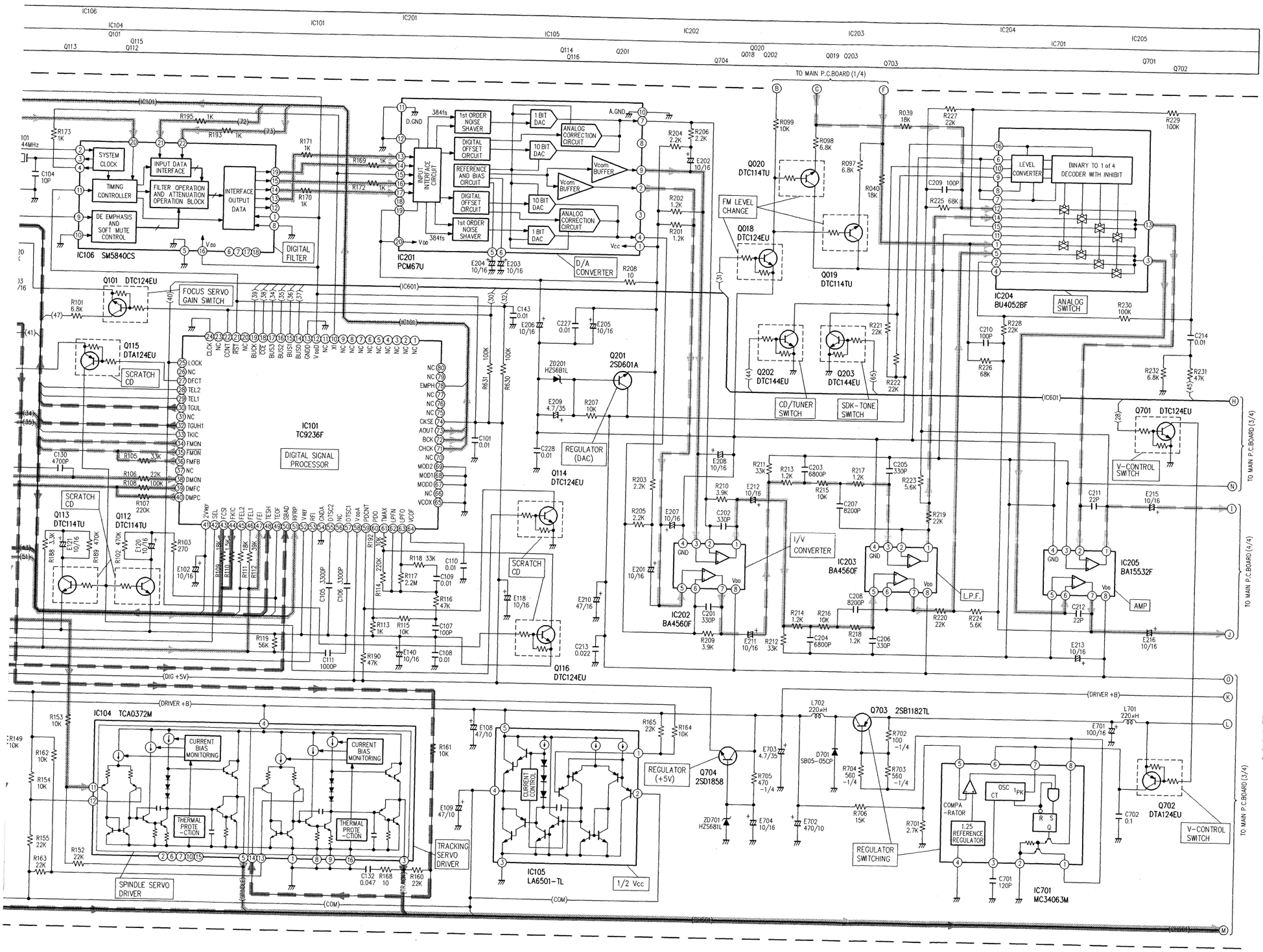
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

7915M 7915M

Schematic Diagram (2/4)





IC101

1	4.8V	17	PS	33	1.7V	49	2.2V	65	0V
2	4.8V	18	PS	34	2.2V	50	2.5V	66	PS
3		19	PS	35	2.2V	51	2.4V	67	0.1V
4	PS	20	PS	36	2.1V	52	2.2V	68	0.1V
5	PS	21	5V	37	5V	53	PS	69	0.1V
6	PS	22	0V	38	2.2V	54	0.1V	70	PS
7	PS	23	PS	39	PS	55	2.6V	71	PS
8	PS	24	0V	40	PS	56	2.6V	72	PS
9	5.1V	25	5.1V	41	4.3V	57	5.6V	73	PS
10	2.5V	26	4.8V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	4.7V	43	2.6V	59	PS	75	0V
12	5.1V	28	2.2V	44	2.6V	60	PS	76	5V
13	0V	29	2.2V	45	2.2V	61	PS	77	5.1V
14	PS	30	2.2V	46	2.2V	62	2.3V	78	0V
15	PS	31	0.4V	47	2.2V	63	2.5V	79	5V
16	PS	32	0.4V	48	2.2V	64	1.6V	80	PS

IC102

1	1.7V	12	PS	23	5V	34	4.4V
2	2V	13	2.7V	24	PS	35	0V
3	2V	14	2V	25	2.1V	36	2.1V
4	2V	15	PS	26	PS	37	PS
5	2V	16	4.9V	27	PS	38	2V
6	3.9V	17	0V	28	2.1V	39	2V
7	0.1V	18	PS	29	2.1V	40	PS
8	2.1V	19	PS	30	2V	41	2V
9	PS	20	PS	31	2V	42	2.1V
10	PS	21	2.4V	32	2.1V	43	2.1V
11	2.1V	22	0V	33	PS	44	2.1V

IC103

1	0V	9	0V
2	0V	10	0V
3	4V	11	2.6V
4	8.5V	12	2.6V
5	3.5V	13	2.6V
6	0V	14	2.6V
7	0V	15	0V
8	0V	16	0V

IC104

1	0V	9	0V
2	0V	10	0V
3	4V	11	2.6V
4	8.5V	12	2.6V
5	3.5V	13	2.6V
6	0V	14	2.6V
7	0V	15	0V
8	0V	16	0V

IC105

1	2.6V		
2	4V		
3	0V		
4	4V		
5	8.5V		

IC106

1	5.1V	12	PS
2	2.6V	13	PS
3	2.6V	14	PS
4	PS	15	PS
5	0V	16	5.1V
6	0V	17	0V
7	0V	18	0V
8	5.1V	19	PS
9	0V	20	PS
10	0V	21	PS
11	4.9V	22	PS

IC109

1	0.1V		
2	0V		
3	0.1V		
4	0.2V		

IC201

1	5V	11	0V
2	3.5V	12	0.3V
3	0.4V	13	PS
4	3.5V	14	PS
5	3.2V	15	PS
6	4.2V	16	PS
7	3.5V	17	PS
8	0.4V	18	0V
9	3.5V	19	0V
10	0V	20	4.9V

IC202

1	AUDIO		
2	3.5V		
3	3.5V		
4	0V		
5	3.5V		
6	3.5V		
7	AUDIO		
8	8.3V		

IC203

1	AUDIO		
2	AUDIO		
3	AUDIO		
4	0V		
5	AUDIO		
6	AUDIO		
7	AUDIO		
8	8.3V		

IC205

1	AD 4.2V		
2	4.2V		
3	4.2V		
4	0V		
5	4.2V		
6	4.2V		
7	AUDIO		
8	8.3V		

IC204

1	AD 3.7V	9	0V
2	AD 4.1V	10	8V
3	4.2V	11	0V
4	0V	12	AD 3.7V
5	4.2V	13	4.2V
6	0V	14	4.2V
7	0V	15	AD 4V
8	0V	16	8.3V

IC701

1	13.7V		
2	0V		
3	0.2V		
4	0V		
5	0V		
6	0V		
7	0V		
8	13.7V		

	E	C	B		E	C	B
Q018	0V	6.4V	0V	Q114	0.1V	PS	0V
Q019	0V	4.6V	4.4V	Q115	0V	0V	0V
Q020	4.4V	4.6V	0V	Q116	0V	PS	5.1V
Q101	0V	0V	0V	Q201	5.7V	8.9V	5V
Q102	0V	0V	0V	Q202	5.1V	0V	0V
Q103	0V	0.1V	0V	Q203	3.5V	0V	0V
Q110	0V	0V	0V	Q701	0V	13.2V	0V
Q111	0V	0V	0V	Q702	13.2V	0V	13.8V
Q112	0V	0V	−0.4V	Q703	13.7V	0V	13.7V
Q113	0V	0V	0.1V	Q704	0V	0V	0V

[Measuring Conditions]

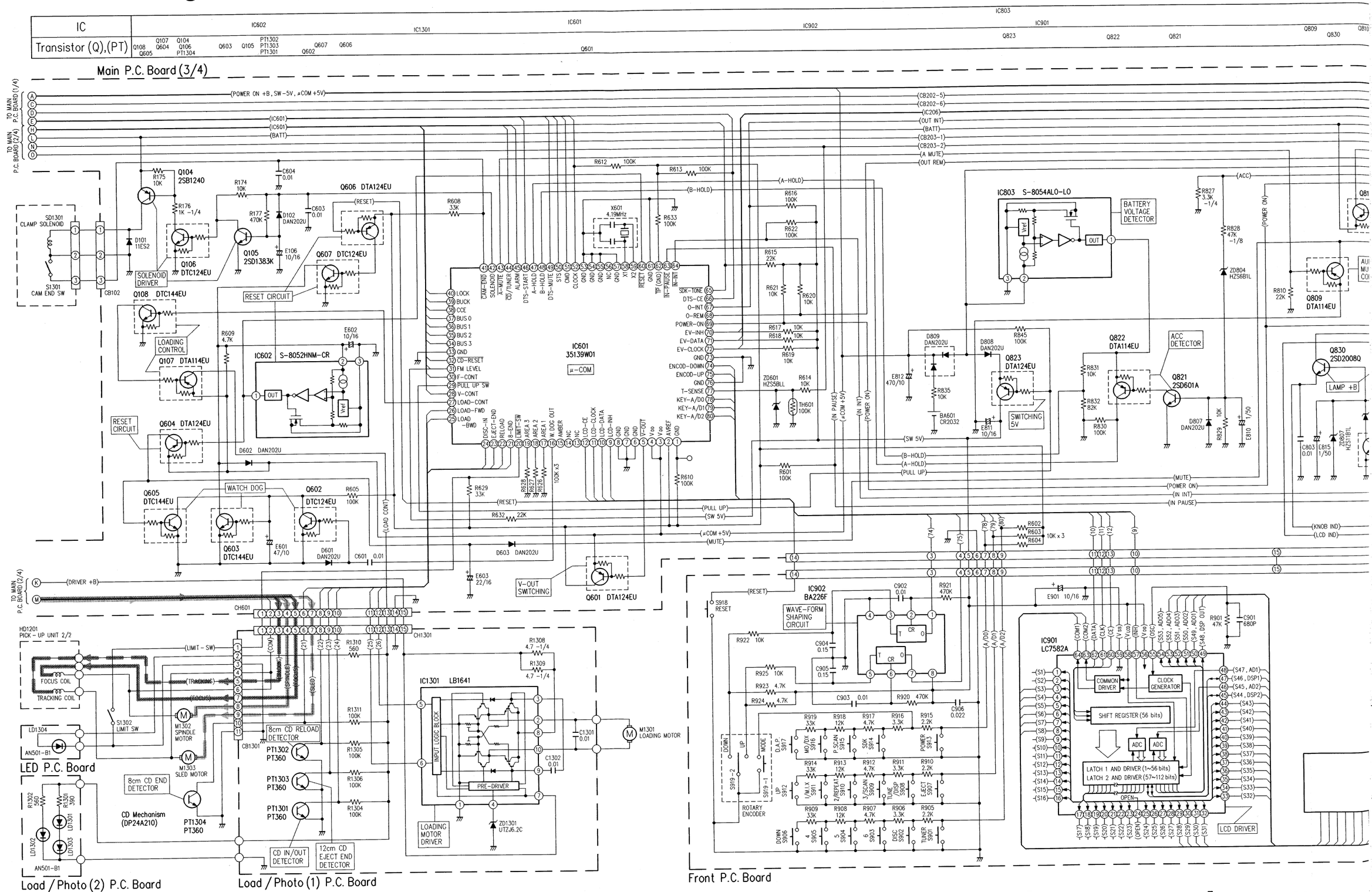
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS − 18).
  TUNER : No signal input
  FM : 98.1 MHz
  MW : 999 kHz
  LW : 216kHz

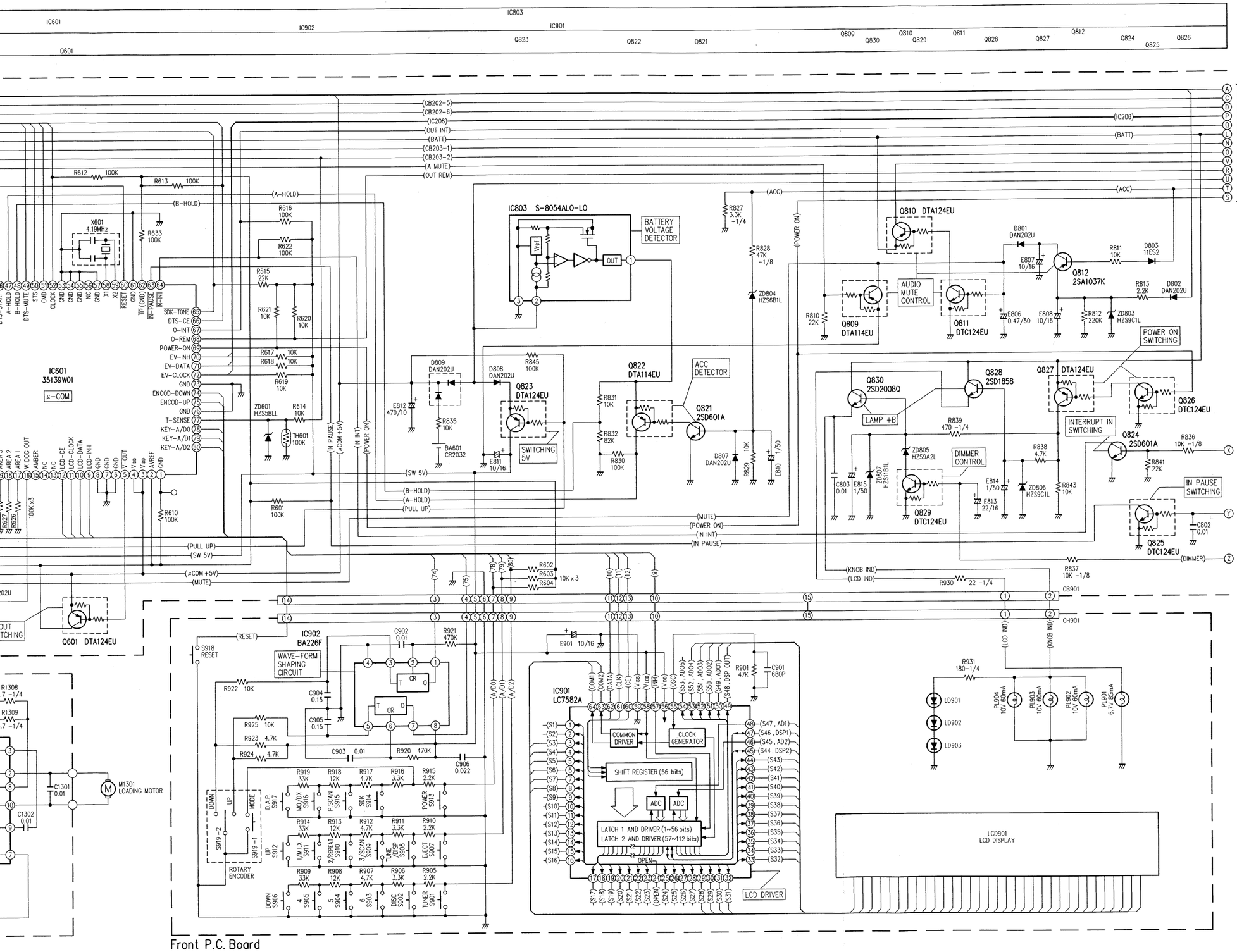
CD Signal Line (Digital)
L-ch Signal Line
R-ch Signal Line
Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/4)





IC601

1	4.6V/0V	18	5V	33	0V	42	0V	59	PS	68	0V/5V
2	5.1V/0V	19	5V	34	PS	43	5.1V/0V	60	5V		O-REM OFF/ON
3	5V/6V	20	0V/4.6V		CD	44	5.1V/0V	61	0V		
4	5V/8V	21	0V	35	PS	45	0V/PS	62	5V	69	2.8V/0V
5	0V/5.3V	22	0V		CD	46	PS		5V/0V		POW ON/OFF
6	0V	23	0V	36	PS	47	5.4V/0V	63	IN-INT OFF/ON	70	PS
7	0V	24	0V		CD	48	4.8V/0V			71	PS
8	0V	25	0V	37	PS	49	PS		5V/0V	72	PS
9	5.1V	26	0V		CD	50	PS	64	IN-PAUSE OFF/ON	73	0V
10	PS	27	5V	38	PS	51	PS			74	PS
11	PS	28	0V/5.1V		CD	52	PS		5V/0V	75	PS
12	PS		TUNER/CD	39	PS	53	0V	65	SDK-TONE OFF/ON	76	0V
13	0V	29	0V		CD	54	0V			77	5V
14	0V	30	0V	40	5.1V	55	0V	66	PS	78	5V
15	5.1V/0V	31	5.1V/0V		CD	56	0V		0V/5V	79	5V
16	PS	32	0V/5V	41	0V/5.1V	57	0V	67	O-INT OFF/ON	80	5V
17	5V		TUNER/CD		DISC IN/OUT	58	PS				

IC602

1	5.1V
2	5.1V
3	0V

IC803

1	5.4V
2	5.8V
3	0V

IC901

1	NC	17	NC	33	PS	49	PS
2	NC	18	NC	34	PS	50	PS
3	PS	19	NC	35	PS	51	PS
4	PS	20	NC	36	PS	52	PS
5	PS	21	NC	37	PS	53	PS
6	PS	22	NC	38	PS	54	NC
7	PS	23	NC	39	PS	55	0V
8	PS	24	NC	40	PS	56	5V
9	NC	25	NC	41	PS	57	PS
10	NC	26	NC	42	PS	58	5V
11	NC	27	NC	43	PS	59	PS
12	NC	28	NC	44	PS	60	0V
13	NC	29	PS	45	PS	61	PS
14	NC	30	PS	46	PS	62	PS
15	NC	31	PS	47	PS	63	PS
16	NC	32	PS	48	PS	64	PS

IC902

1	0.1V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0.1V
8	0V

IC1301

1	0V
2	6V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	6V

	E	C	B		E	C	B
Q104	14V	0V	0V	Q821	0.6V	0V	0V
Q105	0V	0V	0V	Q822	0V	5.4V	5.4V
Q106	0V	13.6V	0V	Q823	0.2V	5.2V	5.2V
Q107	5.1V	−0.1V	5.1V	Q824	0V	5V	0V
Q108	0V	5.1V	0V	Q825	0V	4.9V	0V
Q601	0V	5.1V	5.1V	Q826	2.7V	0V	0V
Q602	0V	5.1V	0V	Q827	14V	0V	14V
Q603	0.2V	0.1V	0V	Q828	11.6V	13.8V	13.3V
Q604	5.2V	0V	5.1V	Q829	0V	2V	0V
Q605	0V	0.1V	0V	Q830	9.3V	13.8V	10V
Q606	5.1V	0V	4.9V				
Q607	0V	4.9V	0V				
Q809	5.1V	0V	5.1V				
Q810	13.7V	3.3V	13.7V				
Q811	0V	13.7V	0V				
Q812	8.5V	0.1V	9.1V				

[Measuring Conditions]

* Power Supply Voltage : DC14V
* Measuring Meter : Digital Multi Voltmeter
* Measuring Point Reference : Between Ground
* Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS − 18).
  TUNER : No signal input
  FM : 98.1 MHz
  MW : 999 kHz
  LW : 216 kHz

Focus Servo Signal Line
Tracking Servo Signal Line
Spindle Servo Signal Line
Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Front P.C. Board

7915M 7915M

Schematic Diagram (4/4)

IC	IC207 IC802 IC801 IC206 IC208 IC213 IC209 IC214 IC211 IC210
Transistor (Q)	Q803 Q813 Q814 Q801 Q804 Q805 Q815 Q816 Q807 Q806 Q818 Q817 Q819 Q808 Q820 Q206 Q207 Q204 Q205

Main P.C. Board (4/4)

Main P.C. Board (2/4)

L-ch SIGNAL LINE

R-ch SIGNAL LINE

IC207 NJM4580E

IC208 NJM4580E

IC209 NJM4580E

BUFFER AMP

TONE AMP

L-BLOCK

R-BLOCK

DECODER

LATCH

SHIFT REGISTER

CONTROL

IC206 LC7537AN

IC213 BA4560F

IC214 BA4560F

Main P.C. Board (3/4)

Power P.C. Board

IC801 BA4560F

AUDIO +B 1/2 Vcc

IC802 M5236ML

ASO PROTECTOR

OVER CURRENT PROTECTOR

START CIRCUIT

REF. VOLT GENERATOR

REGULATOR +8V

POWER ON SWITCHING

TUNER SWITCHING

TUNER +B

μ-COM +B

PROTECTION CIRCUIT

POWERANTENNA SWITCHING

OUT REMOTE SWITCHING

INTERRUPT OUT SWITCHING

IC210 BA15532F

IC211 BA15532F

PRE AMP

MUTING

IC206							
1	3.8V	13	AD 4.4V	25	AD 4.4V	37	4.4V
2	4.1V	14	AD 4.4V	26	4.4V	38	AD 4.4V
3	0V	15	0V	27	AD 4.4V	39	AD 4.4V
4	AD 4.1V	16	0V	28	4.4V	40	AD 4.4V
5	AD 3.9V	17	0V	29	AD 4.4V	41	NC
6	3.9V	18	0V	30	NC	42	8.3V
7	NC	19	8.3V	31	AD 4.4V	43	8.3V
8	AD 4.4V	20	0V	32	AD 4.4V	44	NC
9	4.4V	21	5V	33	AD 4.4V	45	AD 4.4V
10	AD 4.4V	22	5.1V	34	NC	46	AD 4.4V
11	AD 4.4V	23	0V	35	4.4V	47	AD 4.4V
12	4.4V	24	AD 4.4V	36	3.7V	48	NC

IC207	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC208	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC210	
1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC211	
1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

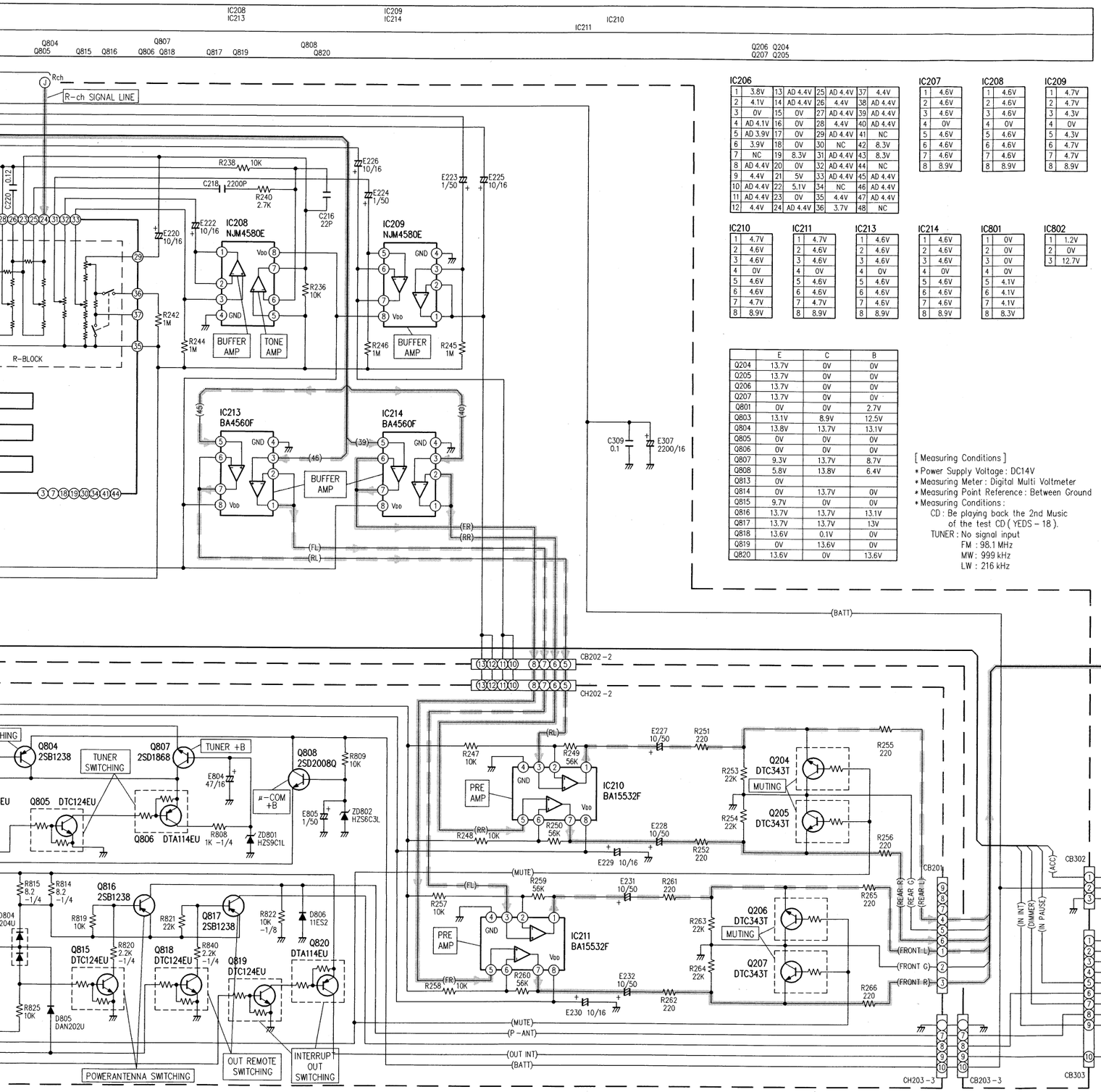
IC213	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC214	
1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC801	
1	0V
2	0V
3	0V
4	0V
5	4.1V
6	4.1V
7	4.1V
8	8.3V

	E	C	B
Q204	13.7V	0V	0V
Q205	13.7V	0V	0V
Q206	13.7V	0V	0V
Q207	13.7V	0V	0V
Q801	0V	0V	2.7V
Q803	13.1V	8.9V	12.5V
Q804	13.8V	13.7V	13.1V
Q805	0V	0V	0V
Q806	0V	0V	0V
Q807	9.3V	13.7V	8.7V
Q808	5.8V	13.8V	6.4V
Q813	0V		
Q814	0V	13.7V	0V
Q815	9.7V	0V	0V
Q816	13.7V	13.7V	13.1V
Q817	13.7V	13.7V	13V
Q818	13.6V	0.1V	0V
Q819	0V	13.6V	0V
Q820	13.6V	0V	13.6V

[Measuring Conditions]
* Power Supply Voltage : DC14V
* Measuring Meter : Digital Multi
* Measuring Point Reference : B
* Measuring Conditions :
CD : Be playing back the 2r
of the test CD (YEDS-
TUNER : No signal input
FM : 98.1 MHz
MW : 999 kHz
LW : 216 kHz



IC206

1	3.8V	13	AD 4.4V	25	AD 4.4V	37	4.4V
2	4.1V	14	AD 4.4V	26	4.4V	38	AD 4.4V
3	0V	15	0V	27	AD 4.4V	39	AD 4.4V
4	AD 4.1V	16	0V	28	4.4V	40	AD 4.4V
5	AD 3.9V	17	0V	29	AD 4.4V	41	NC
6	3.9V	18	0V	30	NC	42	8.3V
7	NC	19	8.3V	31	AD 4.4V	43	8.3V
8	AD 4.4V	20	0V	32	AD 4.4V	44	NC
9	4.4V	21	5V	33	AD 4.4V	45	AD 4.4V
10	AD 4.4V	22	5.1V	34	NC	46	AD 4.4V
11	AD 4.4V	23	0V	35	4.4V	47	AD 4.4V
12	4.4V	24	AD 4.4V	36	3.7V	48	NC

IC207

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC208

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC209

1	4.7V
2	4.7V
3	4.3V
4	0V
5	4.3V
6	4.7V
7	4.7V
8	8.9V

IC210

1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC211

1	4.7V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.7V
8	8.9V

IC213

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC214

1	4.6V
2	4.6V
3	4.6V
4	0V
5	4.6V
6	4.6V
7	4.6V
8	8.9V

IC801

1	0V
2	0V
3	0V
4	0V
5	4.1V
6	4.1V
7	4.1V
8	8.3V

IC802

1	1.2V
2	0V
3	12.7V

	E	C	B
Q204	13.7V	0V	0V
Q205	13.7V	0V	0V
Q206	13.7V	0V	0V
Q207	13.7V	0V	0V
Q801	0V	0V	2.7V
Q803	13.1V	8.9V	12.5V
Q804	13.8V	13.7V	13.1V
Q805	0V	0V	0V
Q806	0V	0V	0V
Q807	9.3V	13.7V	8.7V
Q808	5.8V	13.8V	6.4V
Q813	0V		
Q814	0V	13.7V	0V
Q815	9.7V	0V	0V
Q816	13.7V	13.7V	13.1V
Q817	13.7V	13.7V	13V
Q818	13.6V	0.1V	0V
Q819	0V	13.6V	0V
Q820	13.6V	0V	13.6V

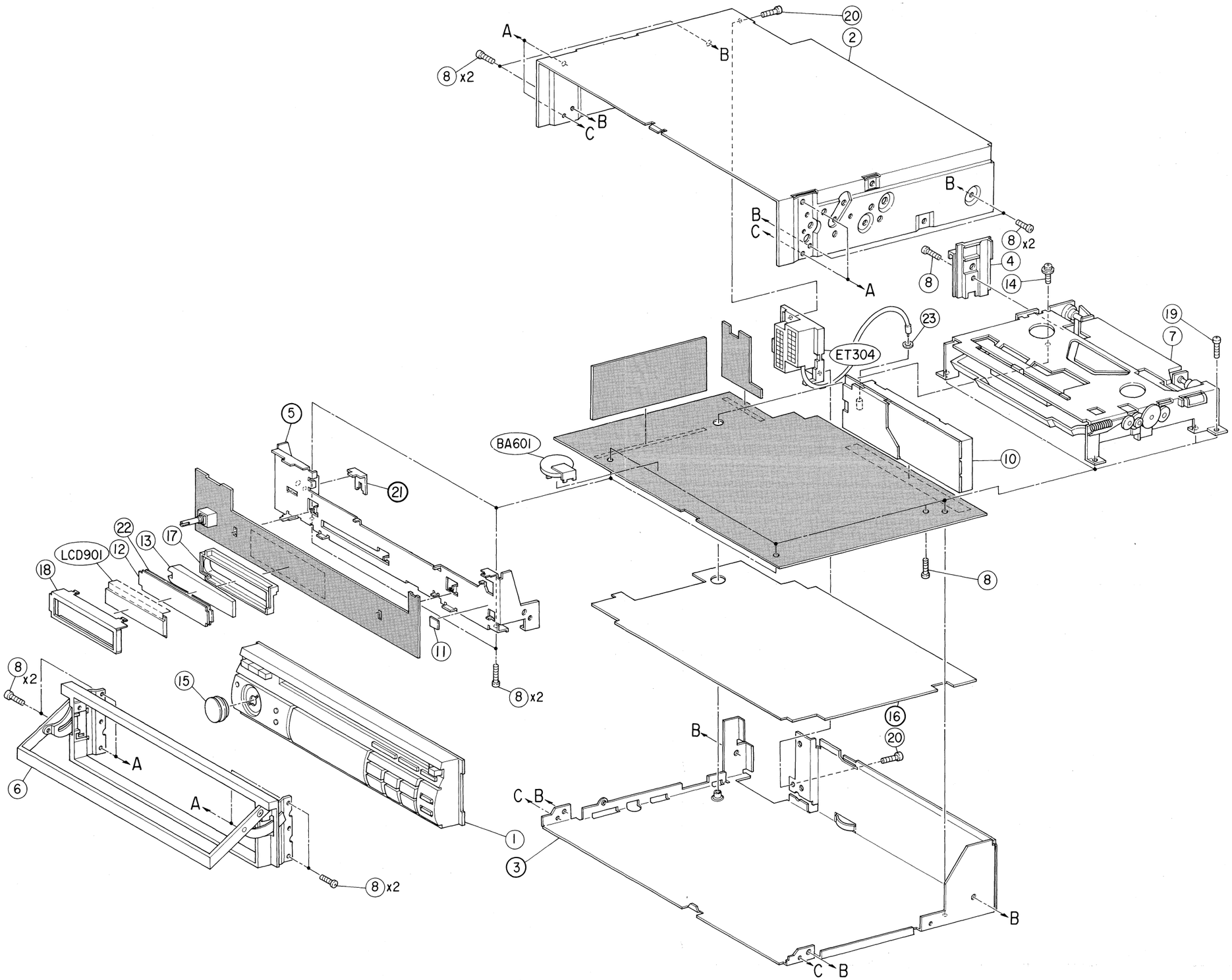
[Measuring Conditions]

- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  - CD : Be playing back the 2nd Music of the test CD (YEDS – 18).
  - TUNER : No signal input
    - FM : 98.1 MHz
    - MW : 999 kHz
    - LW : 216 kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Exploded View (Cabinet)



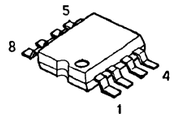
1 2 3 4 5

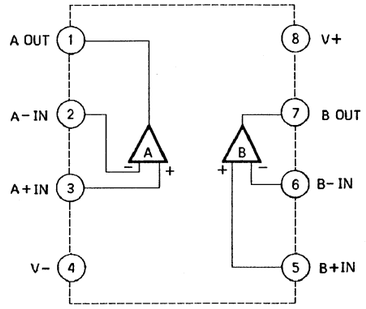
A B C D E F G H

Semi - Conductor Lead Identifications

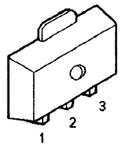
Note : The parts is not mentioned, refer to the Service Manual 7915M (Part No. 68P40469W02).

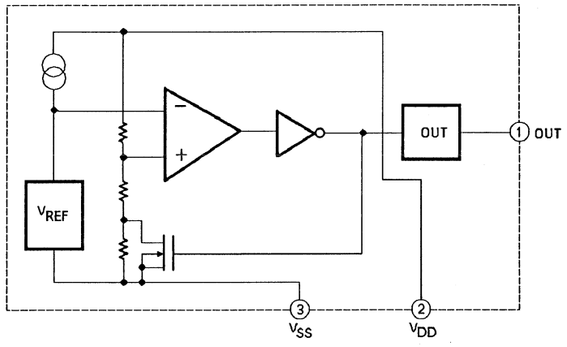
BA4560F : IC213, 214





S-8054ALO-LO : IC803



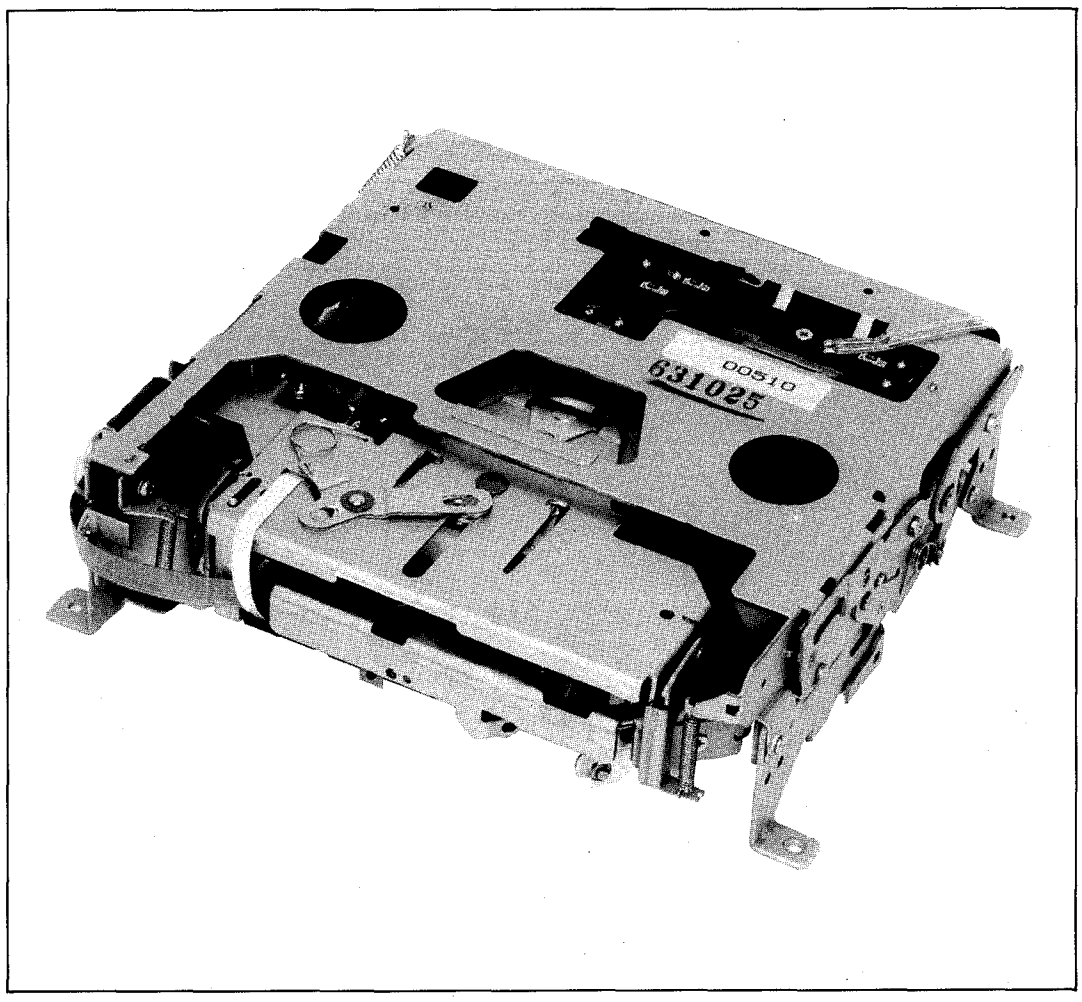


MEMO

ALPINE SERVICE MANUAL

CD Player Mechanism

ADDENDUM & REVISED (III)



DP-S SERIES

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Mechanism Function Description

Function	Step	Description	Illustration
LOADING (of a 12cm CD)	①	The beam to the photo sensor (A) will be broken when a disc is inserted into the loading position.	Figure 1
	②	The mechanism detects the disc insertion and actuates the Loading motor to rotate. The rotation of motor is transmitted to the drive roller through gears (E), (D), (B) and (A).	Figure 2 Figure 7
	③	The disc will be pinched between the drive roller and the upper guide and pulled into the mechanism.	Figure 7
	④	The disc reaches to the sensor gate mechanism. The beam to the photo sensor (D) is broken, and simultaneously the micro-processor discriminates 12 or 8cm CD size depending on the photo sensor (B). If the beam to the photo sensor (B) is broken, the micro-processor detects that the disc is a 12cm CD and it continues feeding the disc.	Figure 3

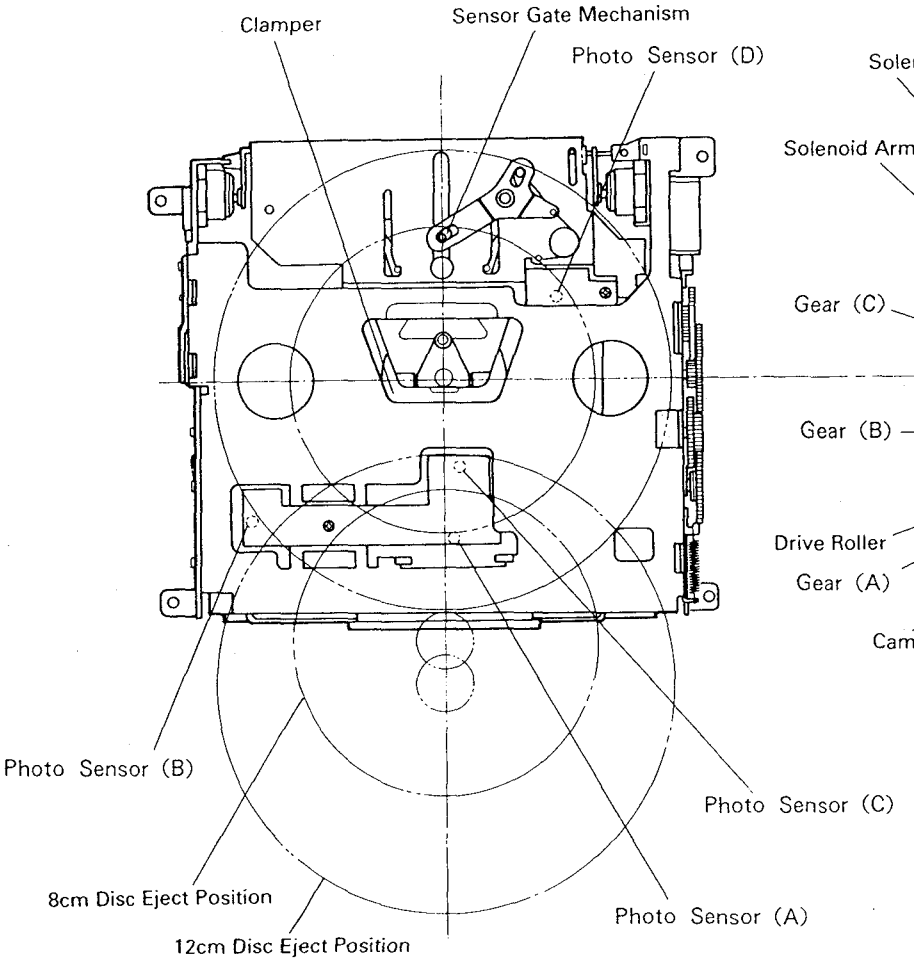


Figure 1

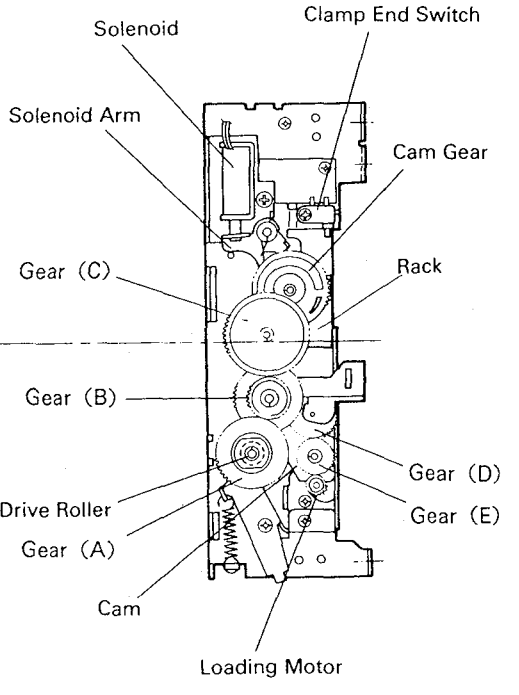


Figure 2

Function	Step	Description	Illustration
LOADING (of a 12cm CD)	⑤	The disc touches the left and right stopper pins, and push them by the feed mechanism. By pushing the stopper pins, the left and right lock levers rotate and the lock pins remove from the lock position of the guide holes.	Figure 3
	⑥	The disc touches the disc stopper and moves the unlocked sensor gate to the outer direction by the feed mechanism.	Figure 4
	⑦	If the disc reaches to the end position, the beam reaches to the photo sensor (B).	Figure 4
	⑧	The mechanism detects that the disc is pulled into the chucking position and starts chucking action.	Figure 4

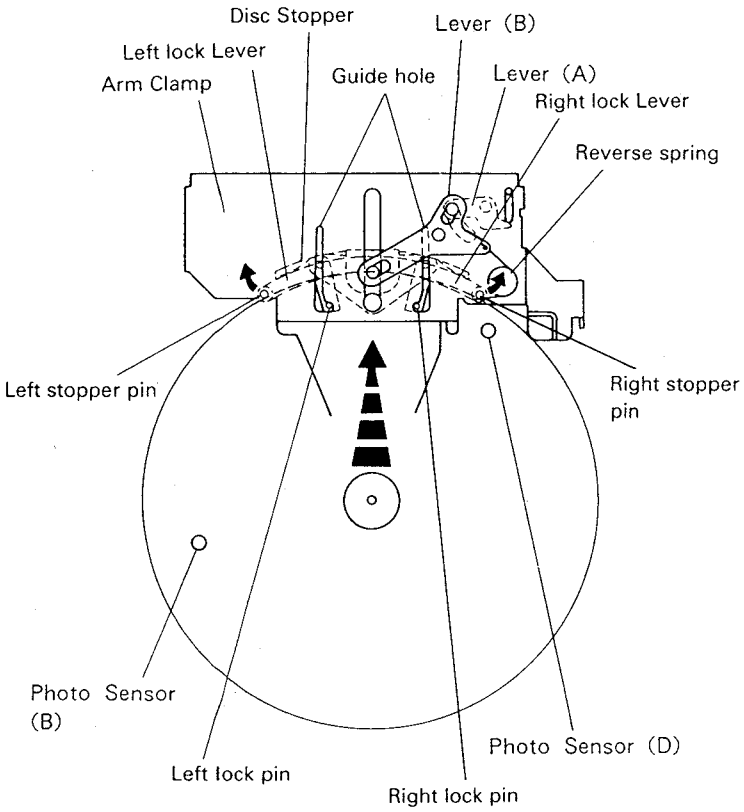


Figure 3

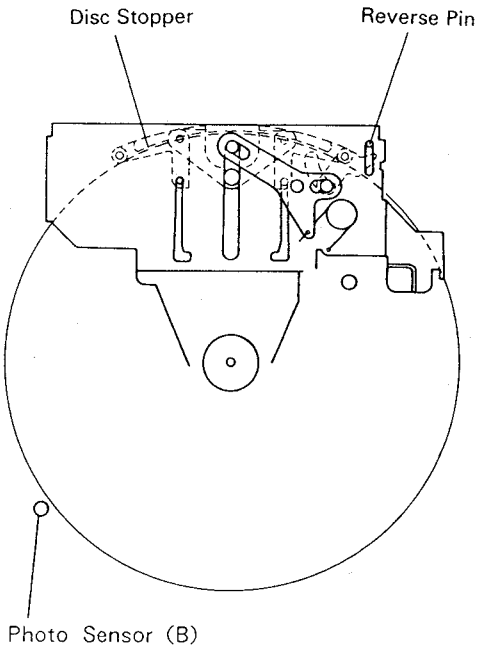
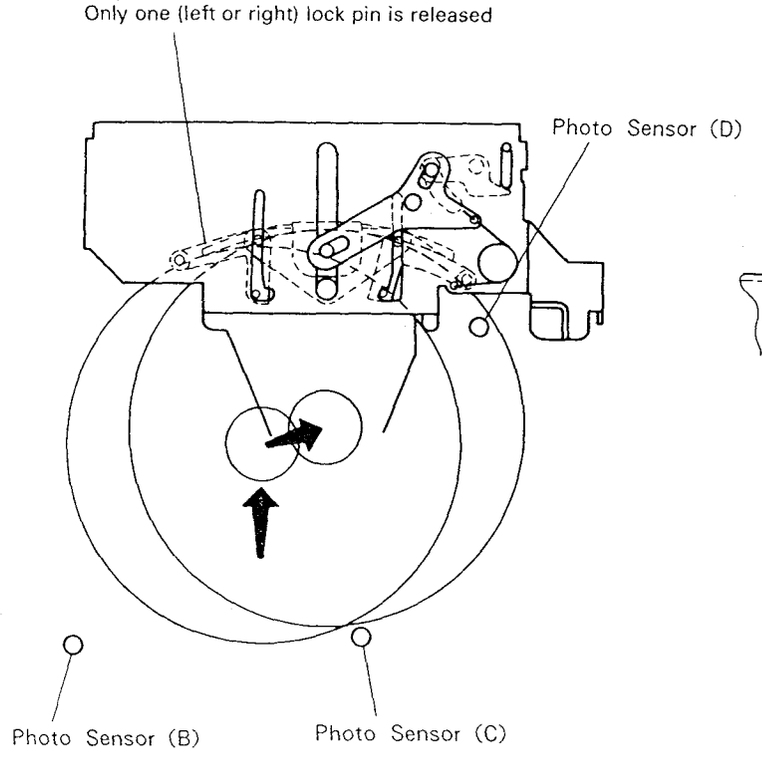


Figure 4

Function	Step	Description	Illustration
LOADING (of a 8cm CD)	① ② ③	The same process as 12cm CD loading operation steps①~③.	Figure 1 Figure 2 Figure 7
	④	The disc reaches to the sensor gate mechanism. The sensor gate mechanism moves depending on the disc insertion position at the disc slot as follows. A) When the disc is inserted at the center of the slot. The disc touches to the disc stopper. The disc cannot push both the left and right stopper pins, so that the locking pins cannot be released. The disc movement stops there. B) When the disc is inserted at the deviated position to the left or right from the center of the slot. First, the disc pushes the left or right stopper pin. The disc cannot push the another stopper pin, so that the locking pins cannot be released. The disc moves by the shape of the disc stopper to the center position and stops.	Figure 5
	⑤	If the beam reaches to the photo sensor (B) and (C) when the beam to the photo sensor (D) is broken by the disc, the mechanism discriminates that the 8cm CD is in the chucking position, and starts chucking action.	Figure 5



When a disc is inserted at the left from the center of the slot.

Figure 5

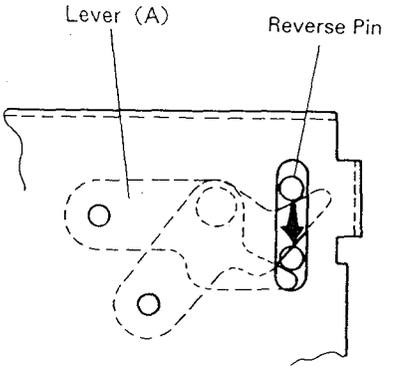


Figure 6

Function	Step	Description	Illustration
CHUCKING	①	The mechanism detects that the disc is pulled into the Chucking position and pulls the solenoid.	Figure 8
	②	The solenoid arm connected with the solenoid starts to rotate and transmits the rotation to the cam gear.	Figure 8
	③	The cam gear starts to rotate and engages with the gear (C) then the driving power of the Loading motor will be transmitted to the cam gear.	Figure 8
	④	The rotating cam gear engages with rack, and moves the rack toward the right.	Figure 8
	⑤	With the movement of the rack, the following functions will be performed simultaneously. A. The clamper moves downward and chucks the disc. B. The drive roller moves downward and releases the disc pinched previously and moves the disc downward. C. Releases the locking on the pickup block and places the unit in the floating status.	Figure 8 Figure 9 Figure 10
	⑥	The rack slides to the right end and releases the engagements between the gear (C) and the cam gear as well as the cam gear and rack, and turns the clamp end switch on.	Figure 8
	⑦	The mechanism detects that the clamp operation has finished, and the Loading motor stops rotating.	Figure 8

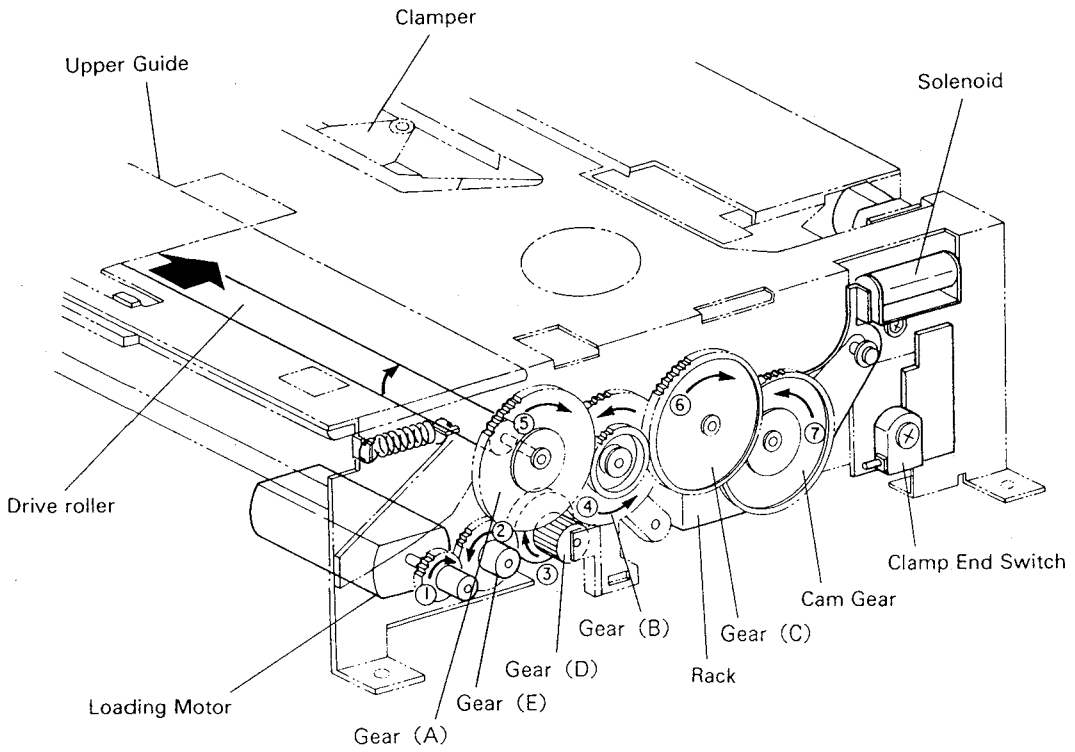


Figure 7

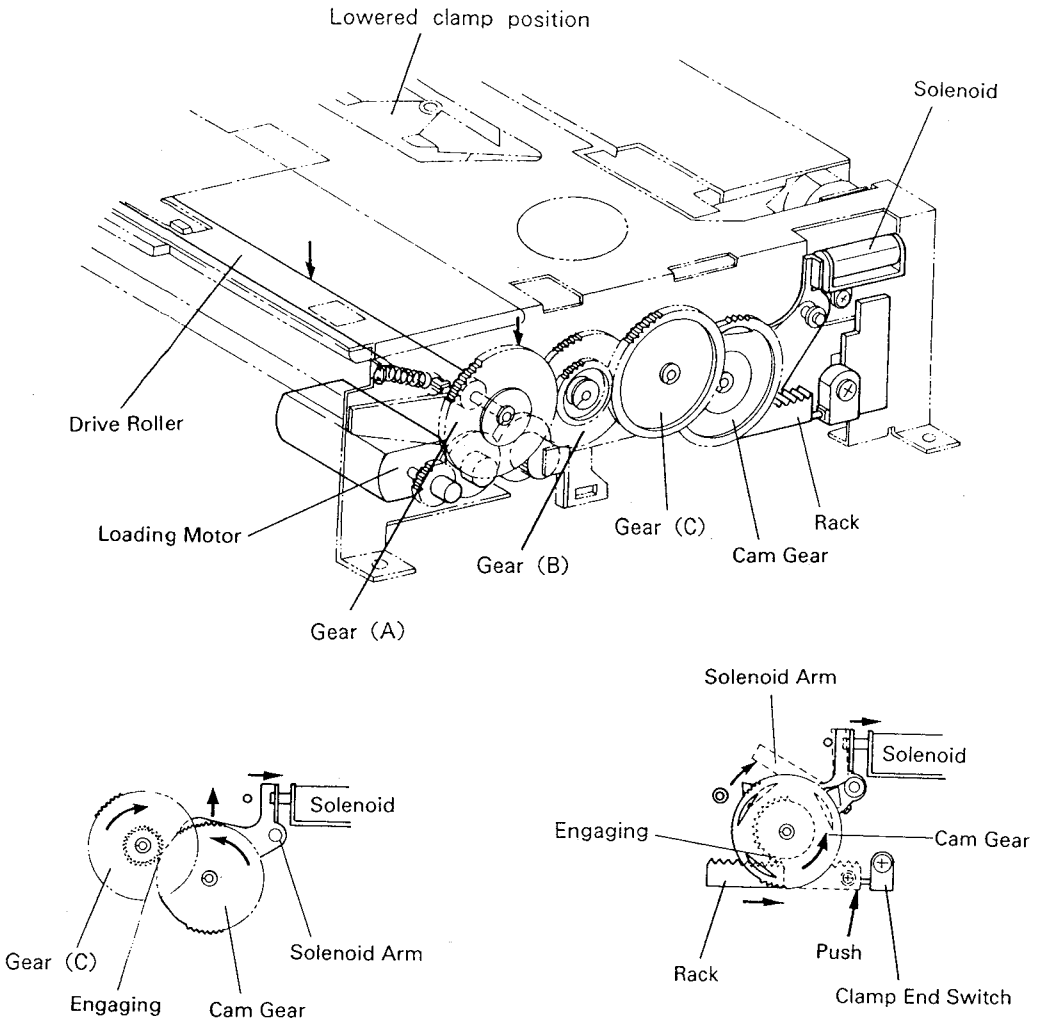


Figure 8

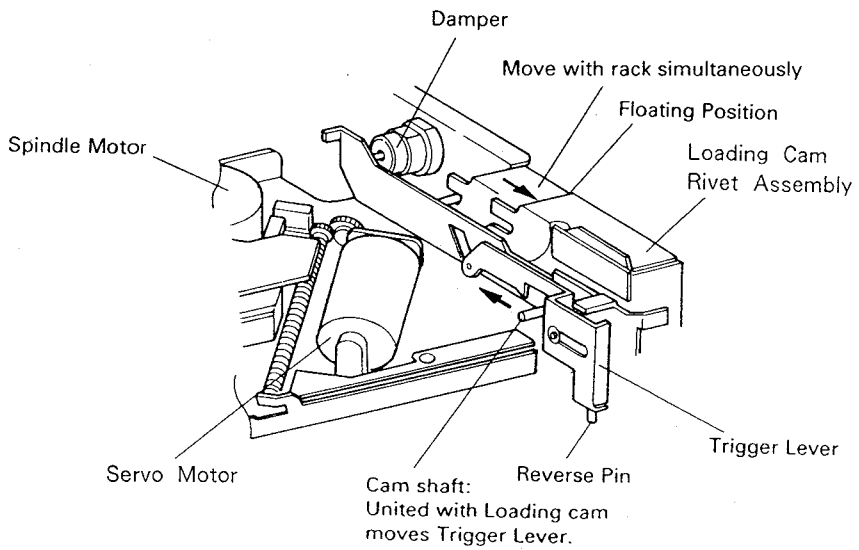


Figure 9

Function	Step	Description	Illustration
PLAY	①	The spindle motor rotates the disc.	Figure 10
	②	The rotation of the servo motor is transmitted to the shaft screw through the gear, moves the pickup.	Figure 10
	③	The Inner limit switch detects the lead-in position of the disc, and the mechanism begins to read the information of the disc.	Figure 10

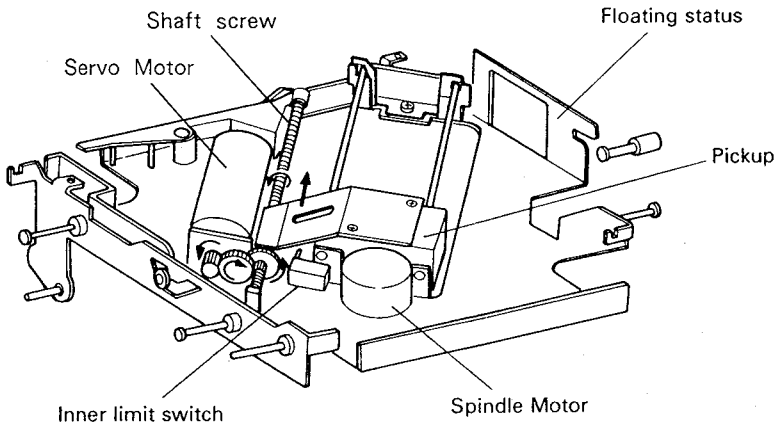


Figure 10

Function	Step	Description
EJECTION (of a 12cm CD)	①	The Loading motor rotates in the reverse direction when loading.
	②	Pulls the solenoid.
	③	The solenoid arm engaged with the solenoid starts rotating and the cam gear engages with the gear (C).
	④	The cam gear rotates and engages with the rack and then moves the rack in the left direction.
	⑤	Engaging with the movement of the rack, the following functions will be performed simultaneously. A. The clamper moves upward and releases the disc. B. The driving roller moves up and lifts the disc, and pinches the disc between it and the upper guide. C. Locks the pickup block. D. The reverse pin moves with engaging the levers (A) and (B), which moves the sensor gate mechanism to the original position.
	⑥	When the rack moves to the left, the engagements between the gear (C) and the cam gear, the cam gear and the rack will be released.

Function	Step	Description
EJECTION (of a 12cm CD)	⑦	The disc which is pinched between the drive roller and the upper guide moves to the outside of the mechanism. When the disc is sent out to the EJECT position, the beam broken by the disc is released and reaches the photo sensor (B).
	⑧	The mechanism detects that the disc has come out to the EJECT position and stops the motor rotation.
	⑨	The mechanism detects that all functions have finished when the disc is pulled out from the mechanism and beam is passed through to the photo sensor (A).
RELOAD (of a 12cm CD)	①	If the disc is not pulled out from the mechanism for 15 seconds after it comes to the EJECT position, the mechanism actuates the Loading function steps ① – ⑧.
EJECTION (of a 8cm CD)	① ② ③ ④	The same process as 12cm CD Eject operation steps ①~④.
	⑤	Engaging with the movement of the rack, the following functions will be performed simultaneously. A. B. ├ The same process as 12cm CD Eject operation step⑤ – A, B, C. C.
	⑥	The same process as 12cm CD Eject operation step ⑥.
	⑦	The disc which is pinched between the drive roller and the upper guide moves to the outside of the mechanism. The disc is released from the drive roller and stops.
	⑧	If the beam reaches the photo sensor (C) after 1.5 seconds from starting ejection, the motor stops.
	⑨	The mechanism detects that all functions have finished, when the disc is pulled out from the mechanism and beam is passed through to the photo sensor (A).

Function	Step	Description
TROUBLE SHOOTING (While Loading a 12cm CD)	①	If the beam to the photo sensor (D) is not broken within 3 seconds after the Loading motor begins rotating as described in the Loading operation step ②, the mechanism takes it as trouble and rotates the Loading motor inversely and pushes the disc out to the EJECT position.
	②	In the Loading step ④, if the beam does not reach the photo sensor (D) within 3 seconds after the beam to the photo sensor (B) is broken, the mechanism take it as trouble and rotates the loading motor inversely and push the disc out to the eject position. If the disc is removed and the beam reaches the photo sensor (A), the mechanism performs loading, chucking and ejection without a disc. (To place the sensor gate mechanism from the END position to the original position the mechanism operates the Ejection step ⑤－d)
	③	When the disc is pulled out during the loading process, the Loading motor rotates inversely and stops the rotating after certain seconds.
(While loading a 8cm CD)	①	The same process as 12cm CD loading operation step①.
	②	The same process as 12cm CD loading operation step③.
(While Chucking)	①	In the chucking operation (step ①) if the Clamp End Switch doesn't turn on within 3 seconds after the solenoid is pulled, the mechanism takes it as trouble and rotates the Loading motor inversely and pushes the disc out and stops at the EJECT position. When the disc doesn't come to the EJECT position, the motor stops the rotating after certain seconds.
(While Playing)	①	After disc chucking, if the mechanism is unable to read the information of the disc for some reason, it actuates the EJECTION operation steps.
(While Ejecting a 12cm CD)	①	If the disc doesn't come to the EJECT position within 5 seconds after the solenoid is pulled in the EJECTION operation step ①, the mechanism takes it as trouble and rotates the Loading motor inversely and performs the Loading operation steps.
(While Ejecting a 8cm CD)	①	If the beam does not reach the photo sensor (C) within 1.5 seconds after starting ejection, the motor continues rotating. If the beam does not reach the photo sensor (C) within 5 seconds after starting ejection, the mechanism takes it as trouble and changes the motor rotating direction and performs loading steps.

Disassembly Instructions

● For DP24A01O/DP24A02O/ DP24A11O/DP24A11A/ DP24A21O/DP24A22O models

1. Removal of the Load/Photo P. C. Boards

(1) Remove three screws marked with "○" as shown in Figures 11 and 12.

(2) Remove the solder (c) as shown in Figure 11.

2. Removal of the LED P. C. Board

(1) Remove the solder (b) as shown in Figure 12.

(2) Remove the screw marked with "▲" as shown in Figure 12.

3. Removal of the End Switch (A) P. C. Board

(1) Remove the two screws marked with "●" as shown in Figure 13.

(2) Remove the two lead wires from the solenoid.

4. Removal of the Pick-Up Unit

(1) Remove the cam gear and the gear (C) as shown in Figure 13.

(2) Remove the four screws marked with "※" as shown Figures 13 and 14.

(3) Both the Pick-Up Unit and Rivet Loading Bracket Assembly will be removed.

Note :The cam gear and gear (C) are mounted with washers. Do not lose the washers, keep them carefully.

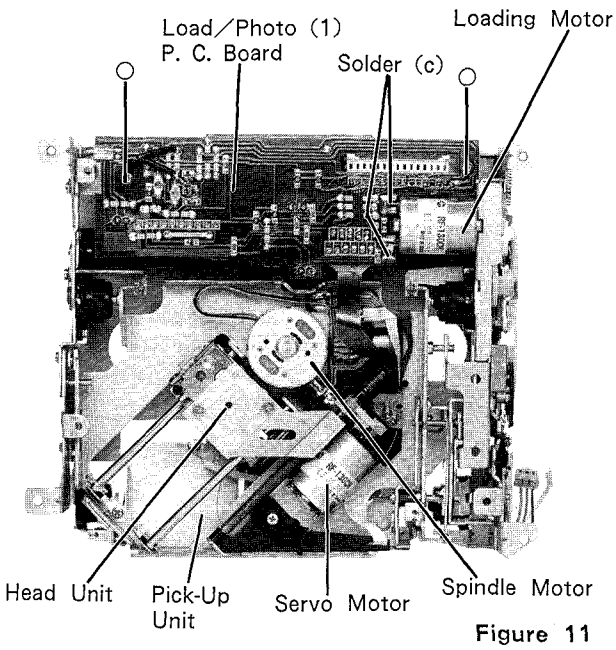


Figure 11

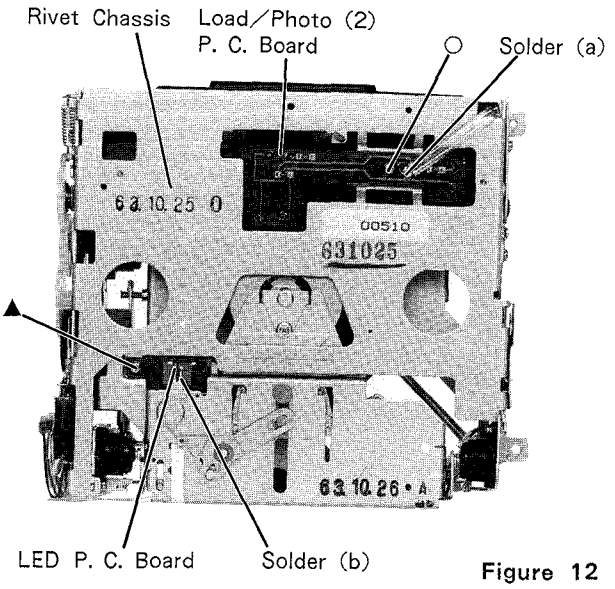


Figure 12

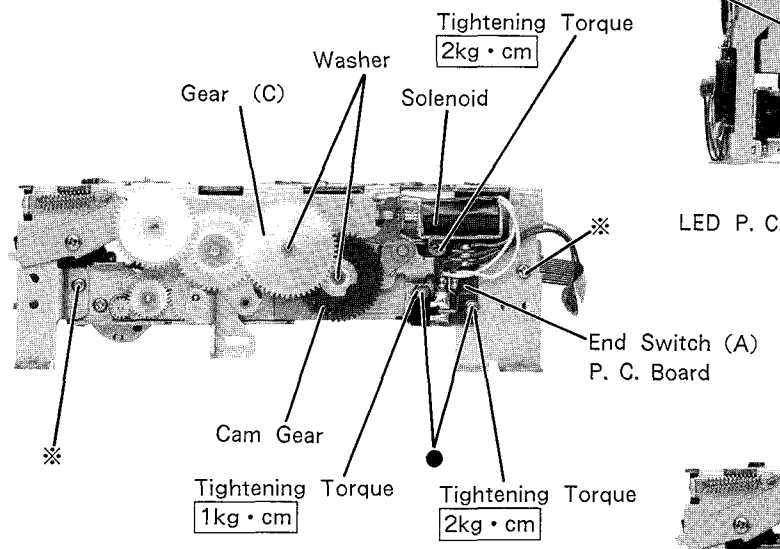


Figure 13

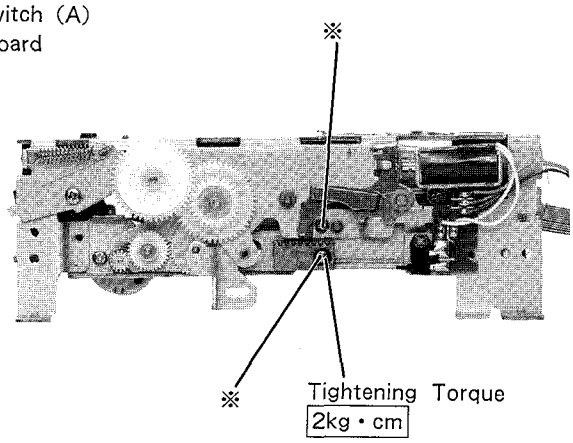


Figure 14

5. Removal of the Rivet Loading Bracket Assembly

(1) After removing the Pick-Up Unit, pull the Rivet Loading Bracket Assembly toward you while twisting it in the direction shown by the arrow, as shown in Figure 15.

6. Removal of the Servo Motor [For DP24A01O / DP24A02O / DP24A11O / DP24A11A / DP24A21O models only]

(1) After removing the Rivet Loading Bracket Assembly, remove the two screws marked with "□" as shown in Figure 16.

Note :Both the Servo Motor and Flexible wire will be removed. Do not damage the flexible wire.

7. Removal of the Head Unit [For DP24A01O/ DP24A02O/DP24A11O/DP24A11A/DP24A21O models only]

(1) After removing the Servo Motor, remove the two screws marked with "◆" as shown in Figure 16.

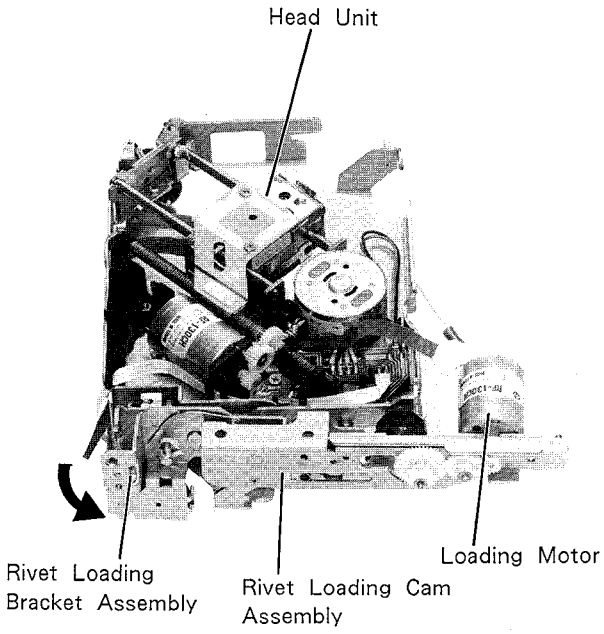


Figure 15

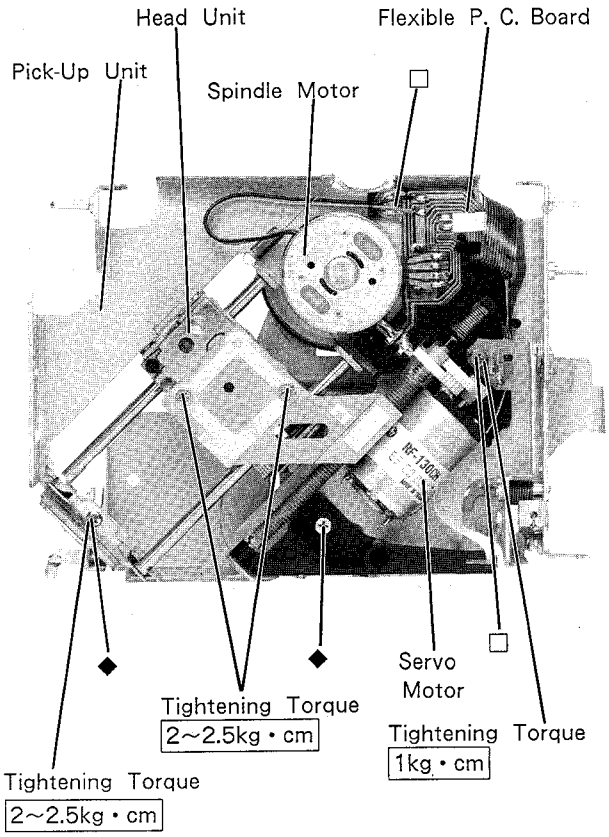


Figure 16

6. Removal of the Servo Motor [For DP24A220 models only]

(1) After removing the Rivet Loading Bracket Assembly, remove the two screws marked with "□" as shown in Figure 17.

Note :Both the Servo Motor and Flexible wire will be removed. Do not damage the flexible wire.

7. Removal of the Head Unit [For DP24A220 models only]

(1) After removing the Servo Motor, remove the five screws marked with "◆" as shown in Figure 17.

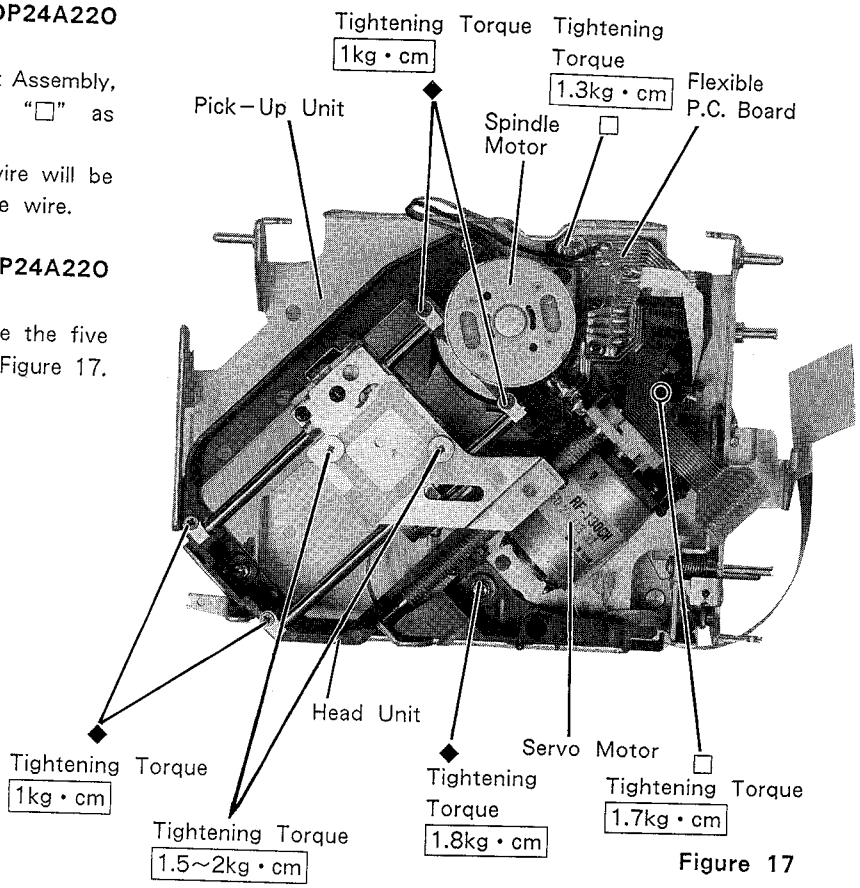


Figure 17

8. Removal of the Rivet Loading Cam Assembly

(1) After removing the Rivet Loading Bracket Assembly, remove the gear (D) and gear (E) as shown in Figure 18.

(2) Remove the Washer and "E" ring as shown in Figures 18 and 20.

Note : 1) Do not lose the washer and "E" ring and keep them carefully.

2) Remove the spring and them at the same time as shown in Figure 18.

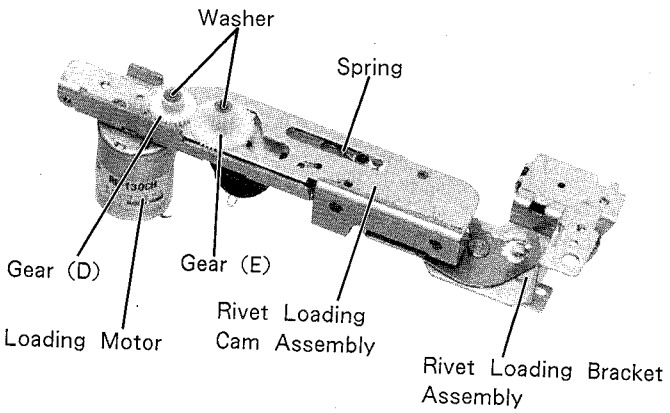


Figure 18

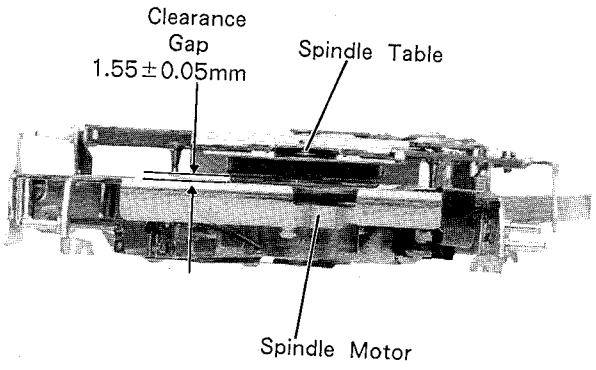


Figure 19

9. Removal of the Loading Motor.

(1) After removing the Rivet Loading Cam Assembly, remove the two screws marked with "△" as shown in Figure 20.

※Useful hints for remounting the cam gear and gear (C).

(1) Set the Rivet Loading cam Assembly to the loading position as shown in Figure 21.

(2) Engage the cam gear with the gear (C) as shown in the Figure 22, and mount them on the shafts (A) of the Arm Load (R) Assembly as shown in Figure 21.

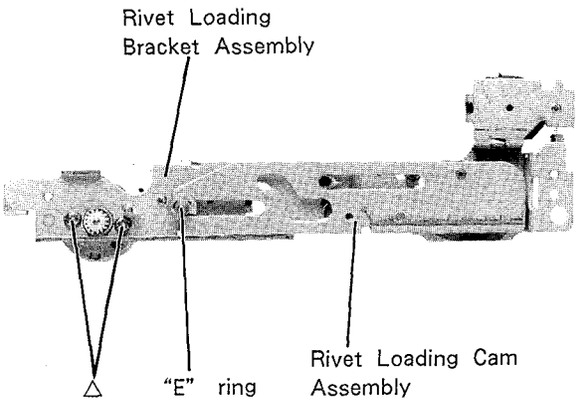


Figure 20

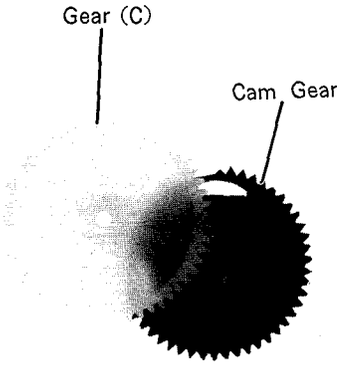


Figure 22

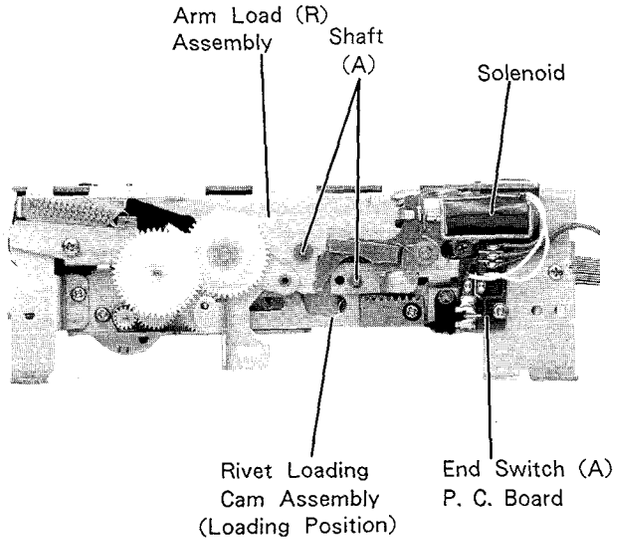


Figure 21

※Caution on remounting the Servo Motor.

(1) After mounting the servo motor, make sure the clearance between the servo motor and flexible wire is more than 0.5mm as shown in Figure 23.

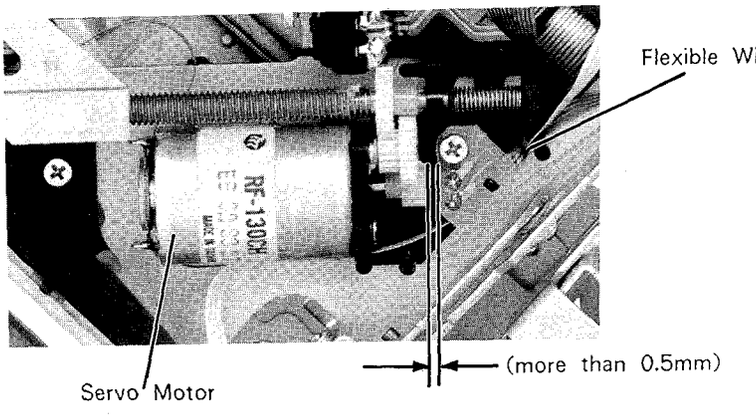


Figure 23

CD Mechanism Assembly Parts List

●For DP24A010/DP24A020/DP24A110/DP24A11A/DP24A210 Models

Symbol No.	Index	Part No.	Description
202	4-H	15C13518W01	Guide, Top (DP-2)
203	5-C	03S44205G14	Screw, Pan (M2 × 5)
204	5-B	30T73687F18	Parallel Wire (2P)
205	4-C	41B12249W02	Spring, Pull
206		04B41345P06	Washer, Lock (M2.1)
207	1-E	41A20219W01	Spring, ROL (L)
208	5-F	45A90817F01	Arm, Solenoid (1)
209	5-F	45A90818F01	Arm, Solenoid (2)
210	5-F	41A92364F01	Spring, Solenoid
211	2-F	07B10907W01	Stopper, Disc
212	4-F	47A61544F02	Plunger, RF Solenoid
213	3-G	75A20934W01	Cushion, Magnet (B)
214	4-F	84A92276F01	END Switch (A) P.C. Board
215		03D40014G66	Screw, W/Washer (M2 × 3.5)
216		03D40014G07	Screw, W/Washer (M2 × 4)
217	4-F	44B90838F01	Gear, Cam
218	4-C	46A91007F02	Stud, Gear
219	4-E	41B12249W07	Spring, Pull
221	2-F	49B90822F01	Roller (G)
223		43A90873F01	Bush, Roller
225	4-C	41A90877F01	Spring, Cam
226		03D40014G62	Screw, W/Washer (M2 × 3)
227	5-C	44A90836F01	Gear (D)
228	5-C	44A90837F01	Gear (E)
229	5-C	04B41345P01	Washer, Lock (M1.2)
230		75B11922W02	Damper, DP-3
231		15A12929W01	Holder, Damper-3
232	4-D	04C42091G06	Ring "E" (M1.5)
233	5-C	04C42091G11	Ring "E" (M2.5)
234	3-C	03S94385F01	Screw, Pan (M1.7 × 2.3)
236	4-C	41A11905W01	Spring, Trigger
237	4-F	04C42091G05	Ring "E" (M2)
238	2-B	07A10921W01	Bracket, Shaft
239	4-A	03A90175F05	Screw, Bind (M2 × 3.7)
240		03S94385F09	Screw, Pan (M2 × 3)
241	4-A	03D40014G75	Screw, W/Washer (M2 × 9)
242	3-B	03D40121T38	Screw, W/Double Washer (M2 × 5)
243	3-E	43A22104W01	Table, Spindle
244	3-B	07B10923W01	Bracket, Screw
245	2-C	47A20146W01	Shaft, Pick-up
246	4-D	43A11901W01	Bush, Triger (A)
247		04B41345P15	Washer, Lock (M1.2)
248	3-D	01B12125W01	Assy., Riv. Pick Chassis
249	3-B	47A10927W01	Shaft, Screw
250	3-B	44A90998F01	Gear, Screw
252	4-B	44A90996F01	Gear, Motor
253	4-G	41B12249W08	Spring, Pull
254	4-C	44A90997F01	Gear, Middle
255		04B41345P02	Washer, Lock (M1.7)
256	4-F	03S94385F23	Screw, Pan (M2 × 5)
257	5-D	03S94385F07	Screw, Pan (M2 × 2)
258	3-C	07C10922W01	Bracket, Motor
259	4-B	41A10928W03	Spring, Shaft
262	5-G	04S40075G12	Washer, Polyslider (M3.1)
263	3-B	41C10925W01	Spring, Nut
264	3-E	14A96087F01	Sheet, Table
265	4-B	84T15149W01	FPC Actuate P.C.Board
266	4-E	01A12222W01	Assy., Clamper Rivet
267	4-E	01B12123W01	Assy., Riv. Arm Clamp
269	3-F	41A11903W01	Spring, Lever
270	3-F	04B41345P04	Washer, Lock (M2.6)
271	3-E	07A30152W01	Bracket, Disc Stopper
272	3-F	41B12249W01	Spring, Pull
273	4-F	07A11468W01	Plate, Top
274	5-C	44A90830F01	Rack, Cam
275	4-F	03S44205G94	Screw, Pan (M1.7 × 2)
277	2-B	47A21175W01	Shaft, Pick-up
279	1-C	41B12249W03	Spring, Pull
280	2-E	41B12249W04	Spring, Pull
281	4-D	41B12249W05	Spring, Pull

NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
282	4-B	43A20208W01	Spacer, LED		
283	4-E	30T73687F19	Parallel Wire (2P)		
284	3-D	01A92321F02	Assy., Bracket		
			Rivet (CLP-LP)		
287	5-G	01T15181W01	Assy., Clutch DP		
288	2-C	75A21138W01	Sheet, Shaft		
289		03A90175F01	Screw, Bind (M2 × 4)		
290		03A90175F02	Screw, Bind (M2 × 3)		
291	4-E	41B90875F07	Spring, Pull		
292	5-F	44A90834F01	Gear (B)		
293	4-F	44A90835F01	Gear (C)		
294	3-C	43A13508W01	Spacer, Shaft		
295	3-F	41A96086F01	Spring, Arm Clamp		
296	3-F	43A41006F01	Spacer, Polyslider		
297	3-C	43A22457W01	Spacer		
or		43A22457W02	Spacer		
298	2-G	75A20928W01	Rubber, Top Chassis		
299	4-F	04B41345P24	Washer, Lock (M2.1)		
300	4-A	43A20208W02	Spacer, LED (A)		
301	4-F	03S94385F14	Screw, Countersink (M2.6 × 3)		
302		03S94385F25	Screw, Pan (M2 × 4)		
303	4-E	75A20128W01	Sheet, Holder		
304	4-G	03S44205G96	Screw, Bind (M2 × 5)		
305	4-G	03S44205G95	Screw, Bind (M2 × 3)		
306	3-E	03S94385F24	Screw, Pan (M2 × 3)		

Miscellaneous

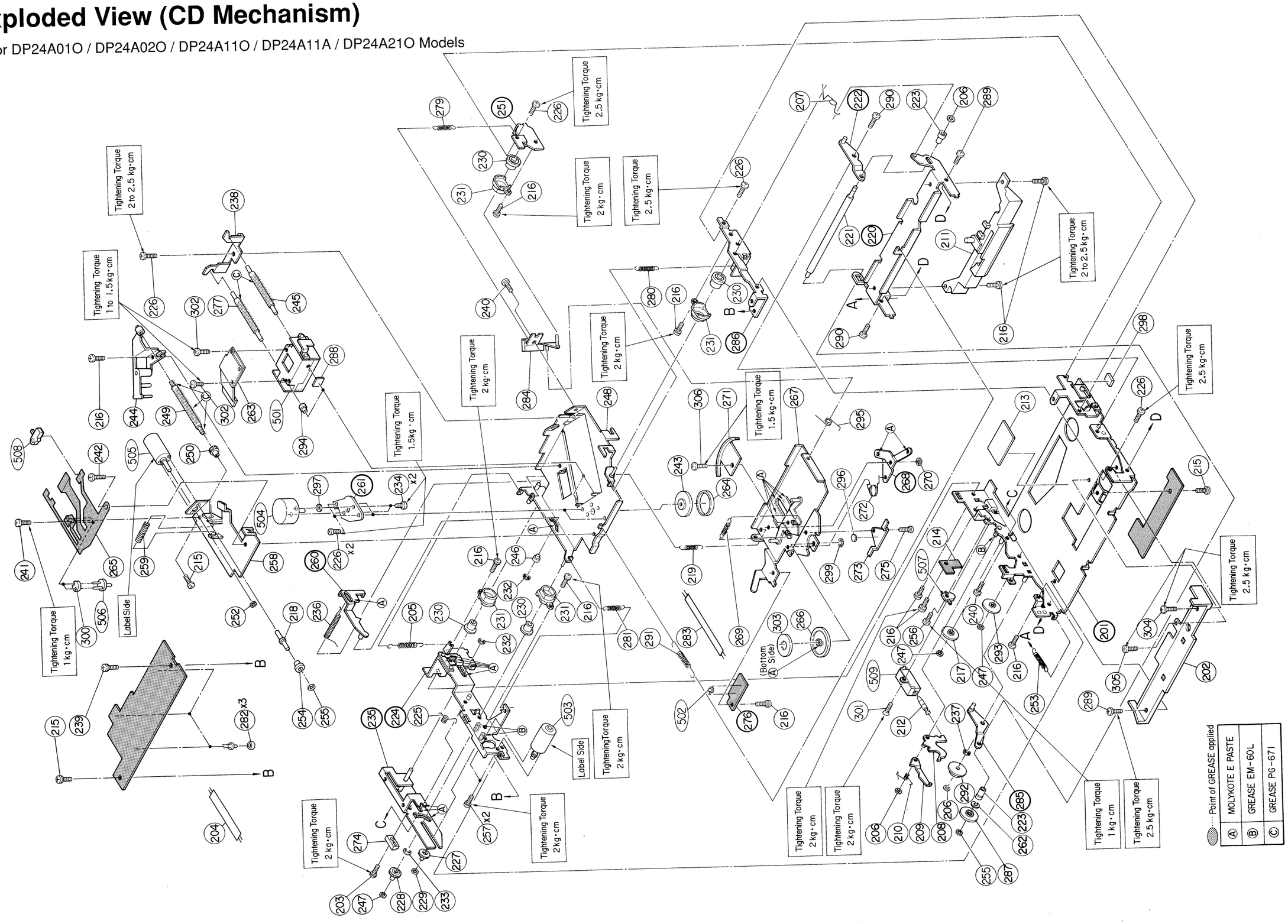
501	3-C	88T15309W01	Pick-up, Unit		
502	4-E	48T16057W02	LED, AN501 (RED)		
503	4-D	01V13100W97	Assy., Motor Load		
504	3-C	59T91005F01	Motor, Spindle		
505	3-B	59T52973F03	Motor, Servo		
506	4-B	48T92913F01	Transistor, Photo PT360		
507	4-F	40T71025F03	Switch, Detector (CAM END)		
508	3-A	40T71025F01	Switch, Detector (LIMIT)		
509	4-F	01A90816F01	Assy., Solenoid DP Frame		

Symbol No.	Index	Part No.	Description		

NOTE : The parts without part numbers are not supplied.

Exploded View (CD Mechanism)

● For DP24A01O / DP24A02O / DP24A11O / DP24A11A / DP24A21O Models



CD Mechanism Assembly Parts List

● For DP24A220 Model

Symbol No.	Index	Part No.	Description
202	4-H	15C13518W01	Guide, Top (DP−2)
203	5-C	03S44205G14	Screw, Pan (M2 × 5)
204	5-B	30T73687F18	Parallel Wire (2P)
205	4-C	41B12249W02	Spring, Pull
206		04B41345P06	Washer, Lock (M2.1)
207	1-E	41A20219W01	Spring, ROL (L)
208	5-F	45A90817F01	Arm, Solenoid (1)
209	5-F	45A90818F01	Arm, Solenoid (2)
210	5-F	41A92364F01	Spring, Solenoid
211	2-F	07B10907W01	Stopper, Disc
212	4-F	47A61544F02	Plunger, RF Solenoid
213	3-G	75A20934W01	Cushion, Magnet (B)
214	3-F	84A92276F01	END Switch (A) P.C. Board
215		03D40014G66	Screw, W/Washer (M2 × 3.5)
216		03D40014G07	Screw, W/Washer (M2 × 4)
217	4-F	44B90838F01	Gear, Cam
218	4-C	46A91007F02	Stud, Gear
219	4-E	41B12249W07	Spring, Pull
221	2-F	49B90822F01	Roller (G)
223		43A90873F01	Bush, Roller
225	4-C	41A90877F01	Spring, Cam
226		03D40014G62	Screw, W/Washer (M2 × 3)
227	5-C	44A90836F01	Gear (D)
228	5-C	44A90837F01	Gear (E)
229	5-C	04B41345P01	Washer, Lock (M1.2)
230		75B11922W02	Damper, DP−3
231		15A12929W01	Holder, Damper−3
232		04C42091G06	Ring "E" (M1.5)
233	5-C	04C42091G11	Ring "E" (M2.5)
234	3-C	27C30861W01	Base, Pick-up
236	4-C	41A11905W01	Spring, Trigger
237	4-F	04C42091G05	Ring "E" (M2)
238	3-D	03S94385F26	Screw Countersink (M1.7×2.6)
239	4-A	03A90175F05	Screw, Bind (M2 × 3.7)
240		03S94385F09	Screw, Pan (M2 × 3)
241	4-A	03S94385F20	Screw, Pan (M2 × 8.5)
242	3-B	03D40121T38	Screw, W/Double Washer (M2 × 5)
243	3-E	43A30923W01	Table, Spindle
244	3-B	07B10923W01	Bracket, Screw
245		47A30925W01	Shaft, Pick-up
246	4-D	43A11901W01	Bush, Triger (A)
247		04B41345P15	Washer, Lock (M1.2)
248	3-D	01B12125W01	Assy., Riv. Pick Chassis
249	3-B	47A10927W02	Shaft, Screw
250	3-B	44A90998F01	Gear, Screw
252	4-B	44A90996F01	Gear, Motor
253	4-G	41B12249W08	Spring, Pull
254	4-C	44A90997F01	Gear, Middle
255		04B41345P02	Washer, Lock (M1.7)
256	4-F	03S94385F23	Screw, Pan (M2 × 5)
257	5-D	03S94385F07	Screw, Pan (M2 × 2)
258	3-C	07C10922W01	Bracket, Motor
259	4-B	41A10928W03	Spring, Shaft
261		03D40014G02	Screw, W/Washer (M2 × 6)
262	3-E	41A10928W04	Spring, Comp
263	3-B	41C10925W02	Spring, Nut
264	3-E	14A96087F01	Sheet, Table
265	4-B	84T15149W01	FPC Actuate P.C.Board
266	4-E	01A31429W01	Assy., Clamper Rivet
267	3-E	01B12123W01	Assy., Riv. Arm Clamp
269	4-E	41A11903W01	Spring, Lever
270	3-F	04B41345P04	Washer, Lock (M2.6)
271	3-E	07A30152W01	Bracket, Disc Stopper
272	3-F	41B12249W01	Spring, Pull
273	4-F	07A11468W01	Plate, Top
274	5-C	44A90830F01	Rack, Cam
275	4-F	03S44205G94	Screw, Pan (M1.7 × 2)
277	3-E	43B30924W01	Spindle, Hub
279	1-C	41B12249W03	Spring, Pull
280	2-E	41B12249W04	Spring, Pull
281	4-D	41B12249W05	Spring, Pull
282	4-B	43A20208W01	Spacer, LED
283	4-E	30T73687F19	Parallel Wire (2P)
284	3-D	01A92321F02	Assy., Bracket Rivet (CLP−LP)
287	5-G	01T15181W01	Assy., Clutch DP
288		07A30961W01	Stopper, Shaft (B)
289		03A90175F01	Screw, Bind (M2 × 4)
290		03A90175F02	Screw, Bind (M2 × 3)
291	4-E	41B90875F07	Spring, Pull
292	5-F	44A90834F01	Gear (B)
293	4-F	44A90835F01	Gear (C)
294		03S70494F14	Screw, Pan (M1.7 × 4)
295	3-F	04S40075G06	Washer, Plyslider (M2.1)
296	3-F	43A41006F01	Spacer, Polyslider
297	3-E	03S94385F24	Screw, Pan (M2 × 3)
298	2-G	75A20928W01	Rubber, Top Chassis
299	4-F	04B41345P24	Washer, Lock (M2.1)
300	4-A	43A20208W02	Spacer, LED (A)
301	4-F	03S94385F14	Screw, Countersink (M2.6 × 3)
302	2-B	03S94385F25	Screw, Pan (M2 × 4)
303	4-E	75A20128W01	Sheet, Holder
304	4-G	03S44205G96	Screw, Bind (M2 × 5)
305	4-G	03S44205G95	Screw, Bind (M2 × 4)

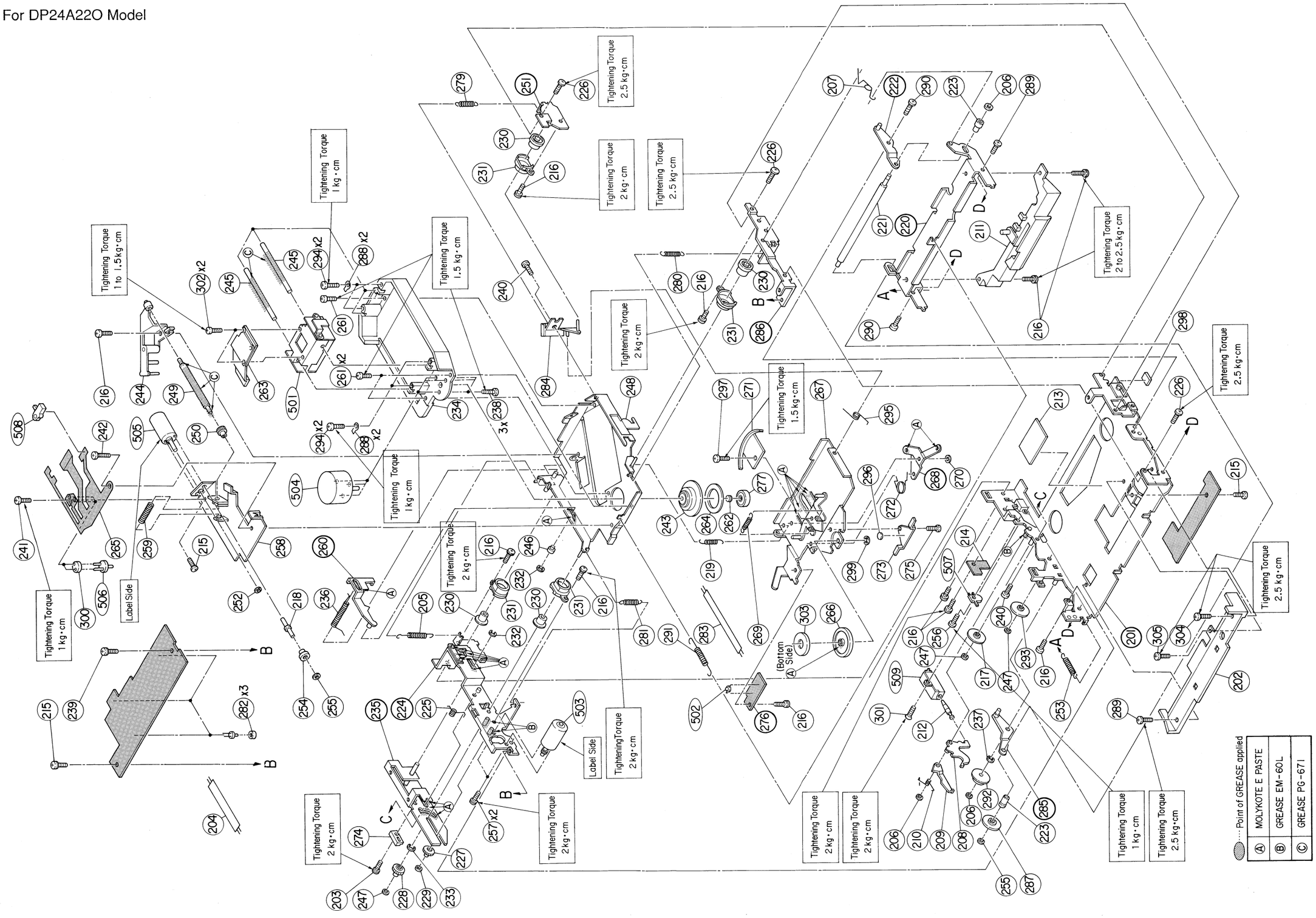
Miscellaneous

501	3-C	88T15309W01	Pick-up, Unit
502	4-E	48T16057W02	LED, AN501 (RED)
503	4-D	01V13100W97	Assy., Motor Load
504	3-C	59T91005F02	Motor, Spindle
505	3-B	59T52973F03	Motor, Servo
506	4-B	48T92913F01	Transistor, Photo PT360
507	4-F	40T71025F03	Switch, Detector (CAM END)
508	3-A	40T71025F01	Switch, Detector (LIMIT)
509	4-F	01A90816F01	Assy., Solenoid DP Frame

NOTE : The parts without part numbers are not supplied.

Exploded View (CD Mechanism)

● For DP24A22O Model



CD Mechanism Assembly Parts List

● For DP22A07O／DP22A08O／DP22A31O／DP22A32O Models

Symbol No.	Index	Part No.	Description
202	4-H	15C13518W01	Guide, Top (DP−2)
203	5-C	03S44205G14	Screw, Pan (M2×5)
204	5-B	30T73687F18	Parallel, Wire (2P)
205		03A90175F01	Screw, Bind (M2×4)
206		04B41345P06	Washer, Lock (M2.1)
207	1-E	41A20219W01	Spring, ROL
208	5-F	45A90817F01	Arm, Solenoid. (1)
209	5-F	45A90818F01	Arm, Solenoid. (2)
210	5-F	41A92364F01	Spring, Solenoid.
□ 211	2-F	07B10907W02	Stopper, Disc
☆ 211	2-F	07B10907W02	Stopper, Disc
◇ 211	2-F	07B10907W02	Stopper, Disc
212	4-F	47A61544F02	Plunger, F／R
213	4-F	03S94385F14	Screw, Countersink (M2.6×3)
214	4-F	84A92276F01	END Switch (A) P.C. Board
215		03D40014G66	Screw, W／Washer (M2×3.5)
216		03D40014G07	Screw, W／Washer (M2×4)
217	4-F	44B90838F01	Gear, Cam
218	4-B	46A91007F01	Stud, Gear
219	4-E	41B12249W07	Spring, Pull
221	2-F	49B90822F01	Roller (G)
223		43A90873F01	Bush, Roller
225	4-C	41A90877F01	Spring, Cam
226		03D40014G62	Screw, W／Washer (M2×3)
227	5-C	44A90836F01	Gear (D)
228	5-C	44A90837F01	Gear (E)
229	5-C	04B41345P01	Washer Lock (M1.2)
230		75B11922W02	Damper, DP-3
231		15A12929W01	Holder, Damper DP-3
232		04C42091G06	Ring "E" (M1.5)
233		04C42091G11	Ring "E" (M2.5)
234	3-D	03S94385F01	Screw, Pan (M1.7×2.3)
236	4-B	41A11905W01	Spring, Trigger
237	3-F	04B41345P04	Washer, Lock (M2.6)
239		04B41345P24	Washer, Lock (M2.1)
240		03S94385F09	Screw, Pan (M2×3)
241		04B41345P15	Washer, Lock (M1.2)
242	3-F	30T73687F14	Parallel, Wire (3P)
243	3-E	43A22104W01	Table, Spindle
244	3-A	07A90992F01	Bracket, Screw
245	3-D	47A91004F01	Shaft, Pick-up
246	4-D	43A11901W01	Bush, Trigger (A)
247		03S94385F10	Screw, Pan (M2×4)
248	3-E	07A92196F01	Bracket, Flex Wire
249	3-C	03A91001F01	Shaft, Screw
250	3-C	44A90998F01	Gear, Screw
252	4-B	44A90996F01	Gear, Motor
253	4-G	41B12249W08	Spring, Pull
254	4-B	44A90997F01	Gear, Middle
255	4-B	04B41345P13	Washer, Lock (M1.7)
256	4-F	03S94385F23	Screw, Pan (M2×5)
△ 257	1-A	03S44205G42	Screw, Pan (M2.6×4)
□ 257	1-A	03S44205G42	Screw, Pan (M2.6×4)
◇ 257	1-A	03S44205G42	Screw, Pan (M2.6×4)
258	3-B	01V91700F07	Assy., Motor Unit
259	3-A	41A90999F01	Spring, Screw
261	1-C	41B21241W02	Spring, Pull
262	2-C	30T92773F01	Cable, Flex (16P)
263	2-B	26A94948F01	Shield
△ 263	2-B	26A94948F01	Shield
□ 263	2-B	26A94948F01	Shield
◇ 263	2-B	26A94948F01	Shield

Notes : The parts without part numbers are not supplied.
△ : For DP22A07O model only, □ : For DP22A08O model only, ☆ : For DP22A31O model only,
◇ : For DP22A32O model only, Others : Common

Symbol No.	Index	Part No.	Description
264	3-E	14A96087F01	Sheet, Table
265	4-B	84T15747W01	FPC Actuator P. C. Board
266	4-E	01A12222W01	Assy., Clamper Rivet
267	3-E	01B12123W01	Assy., Riv. Arm Clamp
269	3-F	41B12249W01	Spring, Slider
270		43A90995F01	Stopper, Shaft
271	3-E	07A30152W01	Bracket, Disc Stopper
272	4-E	41A11903W01	Spring, Lever
273	4-F	07A11468W01	Plate, Top
274	5-C	44A90830F01	Rack, Cam
275	4-F	03S44205G94	Screw, CounterSink (M2.6 × 8)
△ 277	2-C	01V23100W27	Assy., Pick-up Unit-S2
□ 277	2-C	01V24900W02	Assy., Pick-up Unit-S2
☆ 277	2-C	01V24900W02	Assy., Pick-up Unit-S2
◇ 277	2-C	01V24900W02	Assy., Pick-up Unit-S2
279	4-C	41B21241W01	Spring, Pull
280	2-E	41B21241W03	Spring, Pull
281	4-D	41B21241W04	Spring, Pull
282	5-B	43A20208W01	Spacer, LED
283	4-E	30T73687F20	Parallel, Wire (2P)
284	3-D	01A92321F02	Assy., Bracket, Rivet (CLP-LP)
287	5-F	01T15181W01	Assy., DP Clutch
288	5-F	04B41345P02	Washer, Lock (M1.7)
290		03A90175F02	Screw, Bind (M2×3)
291	4-E	41B90875F07	Spring, Pull
292	5-F	44A90834F01	Gear (B)
293	4-F	44A90835F01	Gear (C)
295	4-D	43A20208W03	Spacer, LED (A)
296	4-E	75A20128W01	Sheet, Holder
297		03S94385F10	Screw, Pan (M2×4)
298	3-B	03S94385F12	Screw, Pan (M2.6×6)
299	3-A	43A41006F05	Spacer, Polyslider
300	3-C	07A90993F01	Bracket, Pick-up
301	2-D	01A90994F01	Spring, Nut
302	3-D	03S94385F03	Screw, Pan (M1.7×1.8)
303	3-E	84T90887F01	FPC PHOTO P. C. Board
304	3-D	14S71058F40	Insulator, Cover
305	3-D	03S94385F06	Screw, Pan (M2×1.8)
306	3-B	41A94452F01	Spring, Motor
307	3-E	14A28008W01	Spacer
308	3-F	41A96086F01	Spring, Arm Clamp
309	3-F	43A41006F01	Spacer, Polyslider
310	3-E	03S94385F24	Screw, Pan (M2 × 3)
311	4-G	03S44205G96	Screw, Bind (M2 × 5)
312	4-G	03S44205G95	Screw, Bind (M2 × 4)

Miscellaneous

Symbol No.	Index	Part No.	Description
501	3-C	88T90878F01	Pick-up, Unit
502	4-E	48T16057W02	LED, AN501-B1 (RED)
503	4-D	01V21900W45	Assy., Motor Load
504	3-B	59T90879F01	Motor, Servo
505	3-C	59T91005F01	Motor, Spindle
506	3-D	48T92913F01	Transistor, Photo PT360
507	4-F	40T71025F03	Switch, Detector
508	3-B	40T71025F01	Switch, Detector
509	4-F	01A90816F01	Assy., Solenoid DP Frame

Notes : The parts without part numbers are not supplied.
△ : For DP22A07O model only, □ : For DP22A08O model only, ☆ : For DP22A31O model only,
◇ : For DP22A32O model only, Others : Common

Exploded View (CD Mechanism)

● For DP22A07O / DP22A08O / DP22A31O / DP22A32O Models

Notes :

△ : For DP22A07O model only
□ : For DP22A08O model only
☆ : For DP22A31O model only
◇ : For DP22A32O model only
Others : Common

Point of GREASE applied

Ⓐ MOLYKOTE E PASTE
Ⓑ GREASE EM-60L

Tightening Torque 2.5kg·cm
Tightening Torque 2kg·cm
Tightening Torque 1kg·cm
Tightening Torque 1.5kg·cm
Tightening Torque 3.5kg·cm
Tightening Torque 2±0.5kg·cm

Rear side (Shaft section)
Rear side (Stud section)

Disassembly Instructions

● For DP22A07O／DP22A08O／DP22A31O／DP22A32O models

1. Removal of Main P. C. Board

(1) Unsolder the solder (a) as shown in Figure 24.
(2) Remove two screws marked "○" as shown in Figure 24.
(3) Disconnect all connectors from the Main P. C. Board while lifting up the Main P. C. Board A section.

Note : When unsoldering the solder (a), take care not to break the parallel wire.

2. Removal of Interface P. C. Board

(1) After removing the Main P. C. Board, unsolder the solder (b) as shown in Figure 25.
(2) Remove two screws marked "×" as shown in Figure 25.
(3) Remove two jumper wires connected to the loading motor.

Note : When unsoldering the solder (b), take care not to break the parallel wire.

3. Removal of Sensor P. C. Board

(1) Unsolder the solder (c) as shown in Figure 26.
(2) Remove one screw marked "△" as shown in Figure 26.

Note : When unsoldering the solder (c), take care not to break the parallel wire.

4. Removal of End Switch P. C. Board

(1) Unsolder the solder (d) and (e) as shown in Figure 27.
(2) Remove two screws marked "□" as shown in Figure 27.

Note : When unsoldering the solder (d), take care not to break the parallel wire.

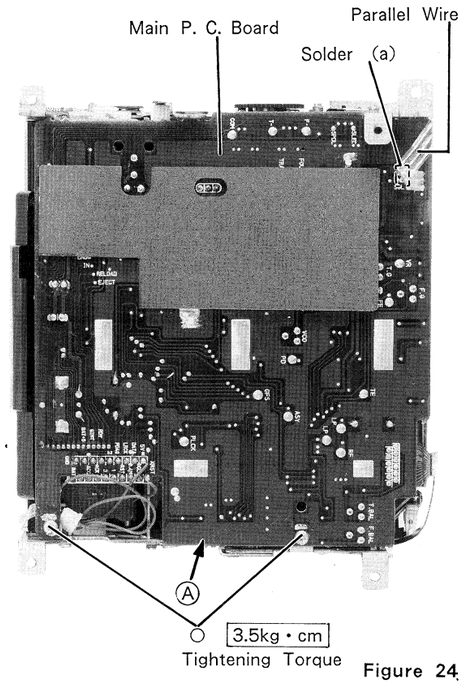


Figure 24

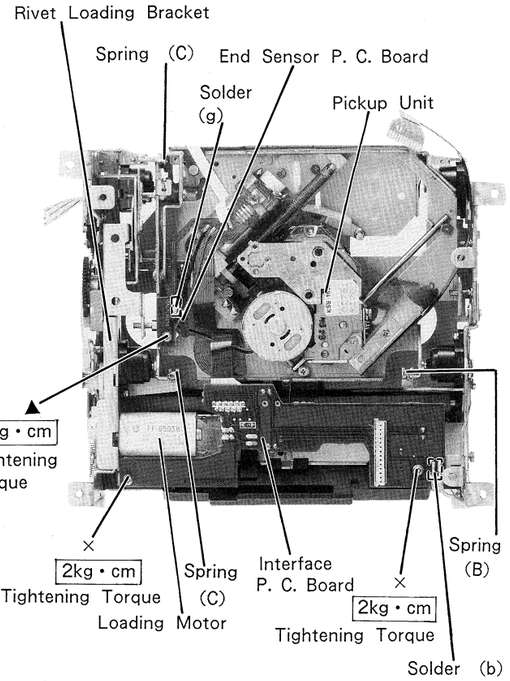


Figure 25

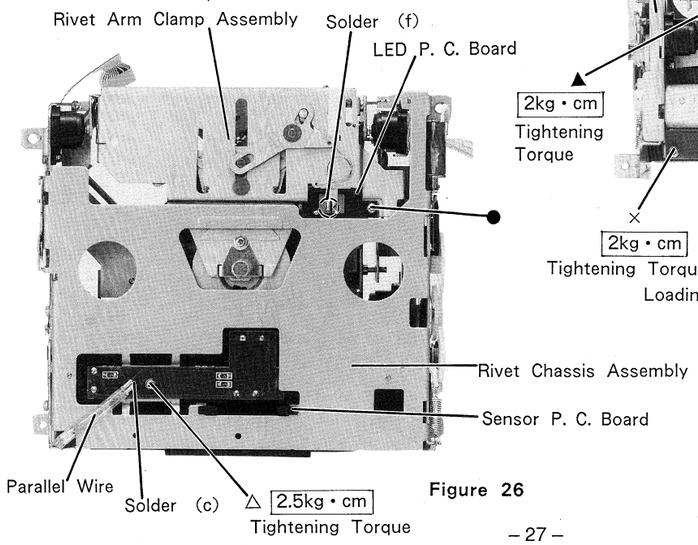


Figure 26

5. Removal of LED P. C. Board

(1) Unsolder the solder (f) as shown in Figure 26.
(2) Remove one screw marked "●" as shown in Figure 26.

Note : When unsoldering the solder (f), take care not to break the parallel wire.

6. Removal of End Sensor P. C. Board

(1) After removing the Main P. C. Board, unsolder the solder (g) as shown in Figure 25.
(2) Remove one screw marked "▲" as shown in Figure 25.

Note : When unsoldering the solder (g), take care not to break the parallel wire.

7. Removal of Damper (L) Bracket

(1) After removing the Main and Interface P. C.Boards, remove one spring (A) as shown in Figure 28.
(2) Remove one screw marked "■" as shown in Figure 28.
(3) Remove the damper from the Pickup Unit shaft, and the bracket can be removed.

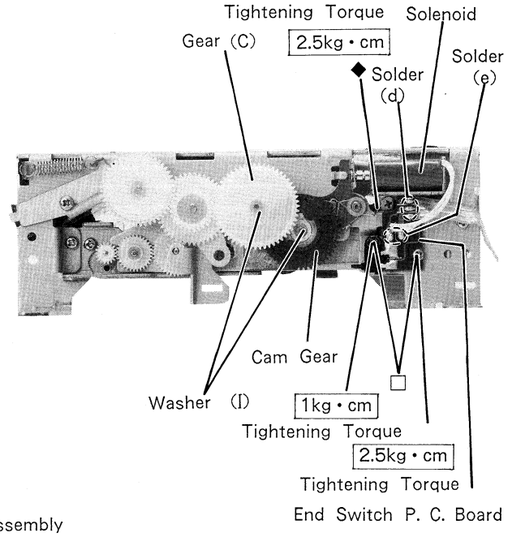


Figure 27

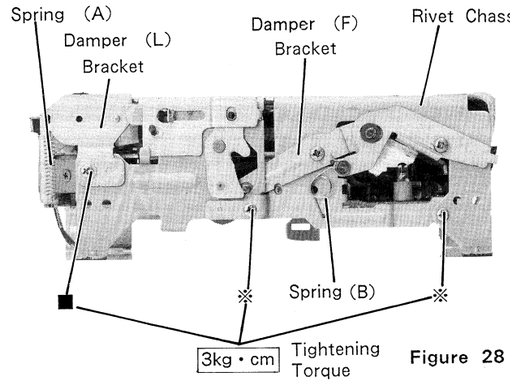


Figure 28

8. Removal of Damper (F) Bracket

(1) After removing the Main and Interface P. C. Boards, remove two springs (B) as shown in Figures 25 and 28.
(2) Remove two screws marked "※" as shown in Figure 28.
(3) Remove the damper from the Pickup Unit shaft, and the bracket can be removed.

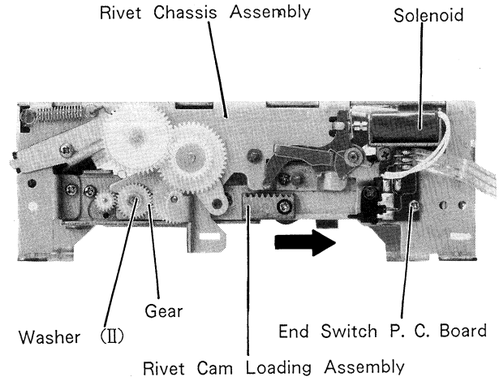


Figure 29

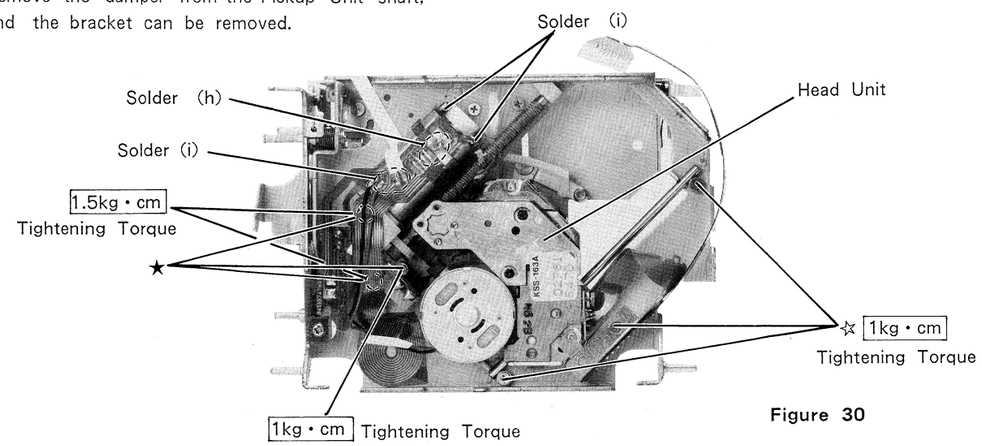


Figure 30

9. Removal of Pickup Unit

(1) After removing the both bracket for the damper (L) and (F), remove the washer (I), cam gear and gear (C) as shown in Figure 27.

(2) Remove three screws marked "*", and the Pickup Unit with Rivet Loading bracket Assembly can be removed as shown in Figure 31.

(3) Remove two springs (C), remove the damper from the Pickup Unit shaft, and then the Rivet Loading Bracket Assembly can be removed as shown in Figure 25.

10. Removal of Head Unit

(1) Unsolder solder (h) as shown in Figure 30.

(2) Remove three screws marked "☆" as shown in Figure 30.

11. Removal of Servo Motor P. C. Board

(1) After removing the Head Unit, unsolder three solder (i) as shown in Figure 30.

(2) Remove three screws marked "★" as shown in Figure 30.

12. Removal of Loading Motor

(1) After removing the Rivet Loading Bracket, remove one washer (II) and gear as shown in Figure 29.

(2) After moving the Rivet Cam Loading Assembly in the arrow direction, remove two screws marked "◇" as shown in Figures 29 and 31.

13. Removal of Solenoid

(1) Unsolder the solder (e) as shown in Figure 27.

(2) Remove one screw marked "◆" as shown in Figure 27.

Precautions during Disassembling and Assembling

1) Be sure to use brand-new washer and do not use any washer which was previously used. The new washer should not have peeling on cleavage.

2) When performing soldering, take care that temperature of the iron tip will not exceed 320℃ and soldering time should be less than 3 seconds. Also make sure there is no defect soldering such as loose solder, solder short and foil breakage.

3) Useful hints for remounting the can gear and gear (C).

① Set the Rivet Loading can Assembly to theloading position as shown in Figure 33.

② Engage the gear can with the gear (C) as shown in the Figure 32, and mount them on the shafts (A) of the Arm Load (R) Assembly as shown in Figure 33.

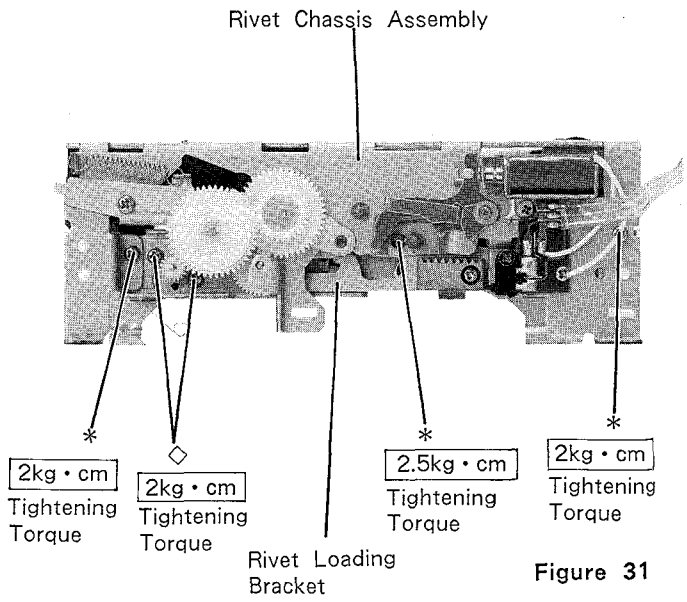


Figure 31

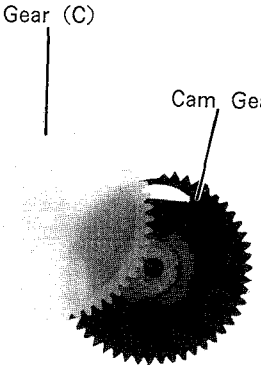


Figure 32

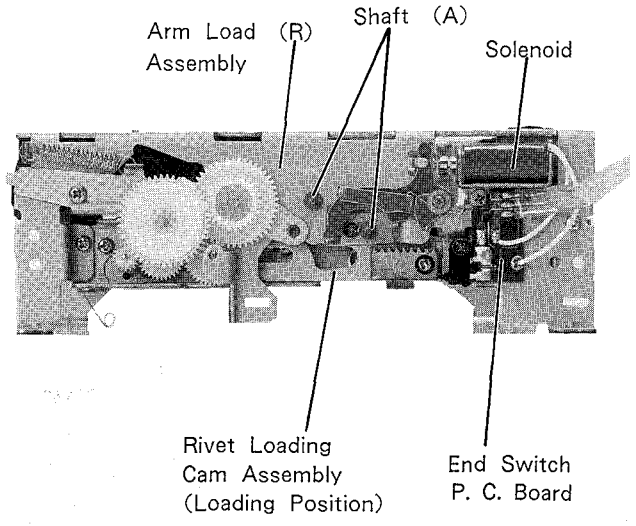


Figure 33